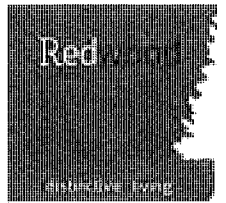


# DEVELOPMENT PLANS FOR PROPOSED REDWOOD LIVING RESIDENTIAL DEVELOPMENT EAST AVON ROAD & DEQUINDRE ROAD ROCHESTER HILLS, MICHIGAN

## REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,  
Landscape Architects & Surveyors, D.P.C.  
7050 West Saginaw Hwy.  
Suite 200  
Lansing, MI 48917

office: 517.272.9835  
fax: 517.272.9836

www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/15/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/11/2019 | 2ND REV. PER CITY COMMENTS |
| 06/07/2019 | 3RD REV. PER CITY COMMENTS |
| 09/22/2019 | 4TH REV. PER CITY COMMENTS |
| 09/27/2019 | STEP ONE PUD REVIEW        |

**PROJECT CONTACTS**

**CIVIL ENGINEER**

BERGMANN ASSOCIATES  
7050 W SAGINAW HWY  
LANSING, MI 48917  
PAUL FURTAW, P.E.  
(517) 272-9835

**DEVELOPER**

REDWOOD USA, LLC  
7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OH 44131  
KELLIE MCIVOR  
(216) 360-9441

**UTILITY AND JURISDICTIONAL CONTACTS**

**PLANNING AND ZONING**

CITY OF ROCHESTER HILLS  
1000 ROCHESTER HILLS DR  
ROCHESTER HILLS, MI 48309  
KRISTEN KAPELANSKI, AICP  
(248) 841-2572

**WATER MAIN**

CITY OF ROCHESTER HILLS  
1000 ROCHESTER HILLS DR  
ROCHESTER HILLS, MI 48309  
PAUL DAVIS, PE  
(248) 841-2490

**SOIL EROSION AND SEDIMENTATION**

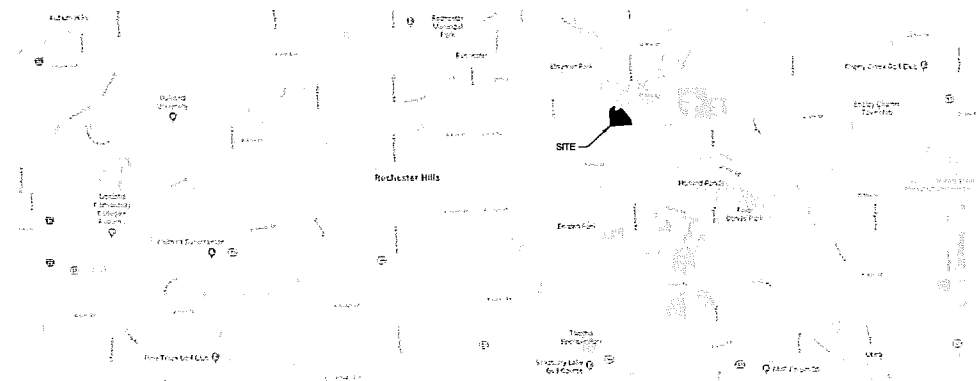
OAKLAND COUNTY WATER RESOURCES  
COMMISSIONER ONE PUBLIC WORKS DRIVE  
WATERFORD, MI 48328  
(248) 858-5389

**ROADS & ENTRANCE**

OAKLAND COUNTY ROAD COMMISSION  
2420 PONTIAC LAKE ROAD  
WATERFORD TOWNSHIP, MI 48328  
(248) 858-4835

**SANITARY SEWER**

CITY OF ROCHESTER HILLS  
1000 ROCHESTER HILLS DR  
ROCHESTER HILLS, MI 48309  
PAUL DAVIS, PE  
(248) 841-2490



SITE LOCATION MAP  
NOT TO SCALE



**DRAWING KEY**

- INCLUDED IN PLAN SET
- NOT INCLUDED IN PLAN SET

**Sheet List Table**

| Sheet Number | Sheet Title                         |
|--------------|-------------------------------------|
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| ■ -          | TOPOGRAPHIC SURVEY                  |
| ■ C100       | OVERALL SITE PLAN                   |
| ■ C101       | SITE ACCESSIBILITY ROUTE            |
| ■ C102       | FIRE APPARATUS PLAN                 |
| ■ C110       | OVERALL UTILITY PLAN                |
| ■ C111       | STORM SEWER MANAGEMENT PLAN - SOUTH |
| ■ C112       | STORM SEWER MANAGEMENT PLAN - NORTH |
| ■ C120       | OVERALL GRADING PLAN                |
| ■ C121       | SOUTHWEST GRADING PLAN              |
| ■ C122       | SOUTHEAST GRADING PLAN              |
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| ■ C200       | AVON ROAD ENTRANCE PLAN             |
| ■ C201       | DEQUINDRE ENTRANCE PLAN             |
| ■ C300       | TREE INVENTORY PLAN                 |
| ■ C301       | TREE INVENTORY PLAN                 |
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| ■ C600       | DRIVEWAY GRADING DETAILS            |
| ■ C601       | NATURAL FEATURE SETBACKS            |
| ■ C602       | DEFENTION POND PLAN AND DETAILS     |
| ■ C603       | DEFENTION POND PLAN AND DETAILS     |
| ■ C604       | EXISTING ZONING EXHIBIT             |
| ■ C605       | WETLAND IMPACT PLAN                 |
| ■ C606       | STORMWATER OUTFALL PLAN             |
| ■ C607       | WETLAND STORAGE PLAN                |
| ■ G1.0       | TITLE SHEET                         |
| ■ A4.1       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.2       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.3       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.4       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.5       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.6       | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.7       | BUILDING PLAN AND ELEVATIONS        |
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| ■ A4.11      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.12      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.13      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.14      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.15      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.16      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.17      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.18      | BUILDING PLAN AND ELEVATIONS        |
| ■ A4.19      | BUILDING PLAN AND ELEVATIONS        |
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| ■ AS.1       | WALL SECTIONS                       |
| ■ L-1        | SITE & ENTRY LANDSCAPE PLAN - NORTH |
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| ■ L-5        | LANDSCAPE NOTES & DETAILS           |
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Not For Construction

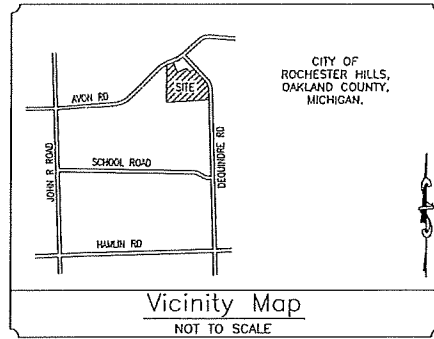
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| Project Manager: | Checked By:     |
|------------------|-----------------|
| P. FURTAW, PE    | P. FURTAW, PE   |
| Design:          | Checked By:     |
| I. GRAMAM, PE    | I. GRAMAM, PE   |
| Date Issued:     | Project Number: |
| NOVEMBER 9, 2018 | 12963.00        |

**COVER SHEET**

**C000**

D:\Redwood Living\12862.DD REDWOOD - ROCHESTER HILLS\A.D. Dwyer\A.I. Civil\DOT FILES\C000 COVER SHEET.dwg  
8/17/2018 3:56 PM



NOTES CORRESPONDING TO SCHEDULE B

- 1) Easement Agreement to Board of Water Commissioners of the City of Detroit as recorded in Liber 5562, Page 209, Oakland County Records and now held by the Oakland-Macomb Interceptor Drain Drainage District, a Michigan statutory public corporation as evidenced in Owl Claim Deed recorded in Liber 41835, Page 87, Oakland County Records and in Assignment of Rights of Way and Easements (Oakland) recorded in Liber 41836, Page 91, Oakland County Records. This does cross or touch this parcel and is shown hereon.
- 2) Easement for water supply system as recorded in Liber 14521, Page 429, Oakland County Records, this does cross or touch this parcel and is shown hereon.
- 3) Water Transmission Main Agreement Between the Cities of Rochester and Rochester Hills as recorded in Liber 16579, Page 159, Oakland County Records, this does cross or touch this parcel, however the easement document does not describe a platable easement, therefore it is not shown hereon.
- 4) Right of Way to The Detroit Edison Company as recorded in Liber 5MR, Page 9 and Liber 5759, Page 533, Oakland County Records. This does include this parcel, however the easement document does not describe a platable easement, therefore it is not shown hereon.
- 5) Easement to Southeastern Oakland County Incinerator Authority, a Michigan public corporation as recorded in Liber 6009, Page 630, Oakland County Records, this does cross or touch this parcel and is shown hereon.
- 6) Joint Right of Way to The Detroit Edison Company and Michigan Bell Telephone Company as recorded in Liber 4222, Page 823, Oakland County Records, this does cross or touch this parcel and is shown hereon.

GENERAL NOTES

- 1) NO EVIDENCE OF EARTH MOVING OR BUILDING CONSTRUCTION/ADDITIONS WERE OBSERVED WHILE CONDUCTING THE FIELD WORK. (ITEM 18, TABLE A).
- 2) NO EVIDENCE OF PROPOSED STREET RIGHT OF WAY LINE CHANGES WERE PROVIDED BY THE CONTROLLING JURISDICTION. (ITEM 17, TABLE A).
- 3) THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS (ITEM 17, TABLE A).
- 4) THIS PARCEL HAS DIRECT ACCESS TO AVON ROAD AND DEQUINDRE ROAD.
- 5) THIS SURVEY MAP CORRECTLY REPRESENTS THE FACTS FOUND AT THE TIME OF THE SURVEY.
- 6) THERE ARE NO DISCREPANCIES BETWEEN THE BOUNDARY LINES OF THE PROPERTY AS SHOWN ON THIS SURVEY MAP AND AS DESCRIBED IN THE LEGAL DESCRIPTION PRESENTED IN THE TITLE COMMITMENT.
- 7) THE BOUNDARY LINE DIMENSIONS AS SHOWN ON THIS SURVEY MAP FORM A MATHEMATICALLY CLOSED FIGURE WITHIN +/-0.1 FOOT.
- 8) THE BOUNDARY LINES OF THE PROPERTY ARE CONTIGUOUS WITH THE BOUNDARY LINES OF ALL ADJOINING STREETS, HIGHWAYS, RIGHTS OF WAY AND EASEMENTS, PUBLIC OR PRIVATE, AS DESCRIBED IN THEIR MOST RECENT RESPECTIVE LEGAL DESCRIPTIONS OF RECORD.
- 9) EXCEPT AS OTHERWISE NOTED BELOW, IF THE PROPERTY CONSISTS OF TWO OR MORE PARCELS, THERE ARE NO GAPS OR GORES BETWEEN SAID PARCELS.
- 10) WETLANDS SHOWN HEREON ARE BASED ON A WETLAND MAP AND FLAGGING PROVIDED BY KING AND MACGREGOR ENVIRONMENTAL. (ITEM 18, TABLE A)
- 11) EASEMENTS AND EXCEPTIONS SHOWN HEREON WERE PROVIDED BY THE TITLE INSURANCE COMPANY, NO RESEARCH HAS BEEN CONDUCTED BY GEODETIC DESIGNS INC. TO IDENTIFY ANY ADDITIONAL EASEMENTS THAT MAY AFFECT THIS PARCEL.
- 12) THE ADJOINING PARCEL TO THE WEST OVERLAPS ONTO THIS PARCEL AS SHOWN.

LEGEND

- |                       |                               |                       |
|-----------------------|-------------------------------|-----------------------|
| Power Pole            | Flag Pole                     | Storm Manhole         |
| Power Pole w/Light    | Sign (As Noted)               | Storm Catchbasin      |
| Light Pole            | Well Head                     | Deciduous Tree        |
| Telephone Pole        | Satellite Dish                | Coniferous Tree       |
| Guy Wire              | Tower                         | Sanitary Manhole      |
| Transformer           | Water Valve                   | Sanitary Clean Out    |
| Electric Manhole      | Fire Hydrant                  | Gas Manhole           |
| Telephone Manhole     | Water Manhole                 | Gas Meter             |
| Telephone Pedestal    | Water Meter Pit               | Gas Marker            |
| Electric Meter        | Water Meter                   | Section Corner        |
| Cable Box             | Indicates Handicapped Parking | Set 5/8" Bar & Cap    |
| Air Conditioner Unit  | Parking Count                 | Found Corner Monument |
| Easement Identifier   |                               | Monitoring Well       |
| Distance not to scale |                               |                       |

ABBREVIATIONS

- |                |                       |                                       |
|----------------|-----------------------|---------------------------------------|
| R = RECORDED   | T3N = TOWN 3 NORTH    | AVE. = AVENUE                         |
| M = MEASURED   | R11E = RANGE 11 EAST  | BLVD. = BOULEVARD                     |
| C = CALCULATED | SO. FT. = SQUARE FEET | CT. = COURT                           |
| N = NORTH      | NE = NORTHEAST        | RD. = ROAD                            |
| E = EAST       | SE = SOUTHEAST        | ST. = STREET                          |
| S = SOUTH      | SW = SOUTHWEST        | PID = PARCEL AND OWNER IDENTIFICATION |
| W = WEST       | NW = NORTHWEST        |                                       |

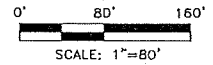
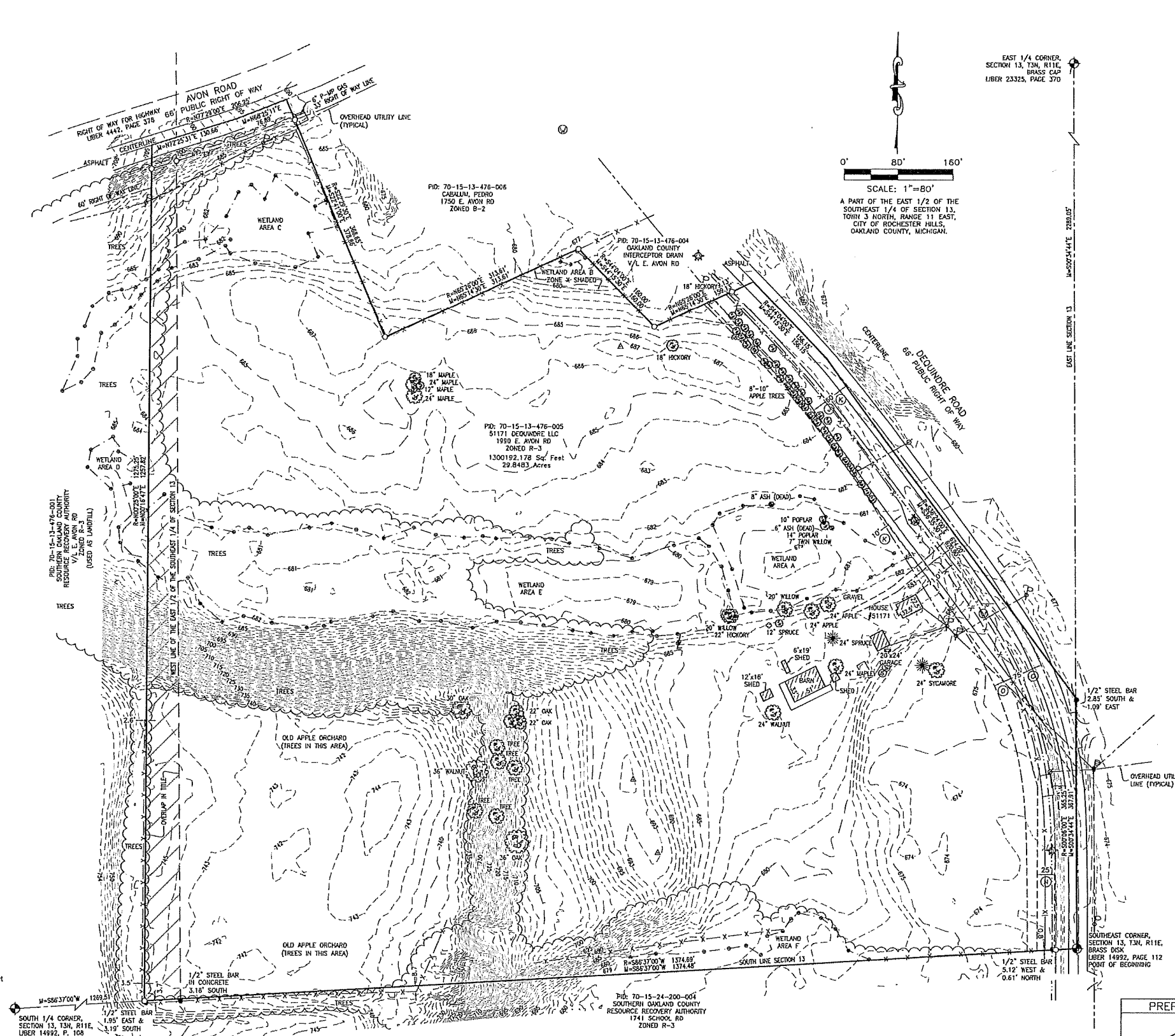
BEARING BASIS

BEARINGS ARE BASED ON THE SOUTH LINE OF SECTION 13, RECORDED AS BEARING S86°37'00"W.

FLOOD NOTE

BY GRAPHIC PLOTTING ONLY, THIS PROPERTY IS LOCATED IN ZONES X & X SHADED OF THE FLOOD INSURANCE RATE MAP NUMBER 26125C0411F WHICH BEARS AN EFFECTIVE DATE OF SEPTEMBER 29, 2008 AND IS PARTIALLY IN A SPECIAL FLOOD HAZARD AREA.

NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND A FLOOD ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.



A PART OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 13, TOWN 3 NORTH, RANGE 11 EAST, CITY OF ROCHESTER HILLS, OAKLAND COUNTY, MICHIGAN.

LEGAL DESCRIPTION (AS PROVIDED)

The land referred to in this Commitment is described as follows:  
 A parcel of land in the East 1/2 of the Southeast 1/4 of Section 13, Town 3 North, Range 11 East, described as:  
 Commencing at the Southeast corner of said Section 13, thence South 86 degrees 37 minutes West 1374.69 feet; thence North 0 degree 25 minutes East 1275.55 feet to the center of Avon Road; thence North 77 degrees 29 minutes East 206.25 feet along the center of Avon Road; thence South 22 degrees 29 minutes 30 seconds East 368.65 feet; thence North 65 degrees 26 minutes East 313.61 feet; thence South 44 degrees 04 minutes East 160 feet; thence North 65 degrees 26 minutes East 159.13 feet to the centerline (so-called) of Dequindre Road; thence South 44 degrees 04 minutes East 156.15 feet and South 38 degrees 24 minutes East 624.20 feet along the centerline of Dequindre Road to its intersection with the East line of said Section 13; thence South 0 degree 05 minutes East 365.25 feet to the point of beginning.

The property described and shown hereon is the same property as described in Fidelity National Title Insurance Company commitment number C-150067, dated June 4, 2018.

LEGAL DESCRIPTION (AS SURVEYED)

The land referred to in this Commitment is described as follows:  
 A parcel of land in the East 1/2 of the Southeast 1/4 of Section 13, Town 3 North, Range 11 East, described as:  
 Commencing at the Southeast corner of said Section 13, thence South 86 degrees 37 minutes 00 seconds West, 1374.48 feet along the South line of Section 13; thence North 0 degree 16 minutes 47 seconds East, 1257.82 feet to the center of Avon Road; thence North 72 degrees 25 minutes 31 seconds East, 130.85 feet and North 68 degrees 29 minutes 11 seconds East, 75.89 feet along the center of Avon Road; thence South 22 degrees 41 minutes 00 seconds East, 378.85 feet; thence North 65 degrees 14 minutes 30 seconds East, 313.61 feet; thence South 44 degrees 15 minutes 30 seconds East, 156.15 feet; thence South 38 degrees 35 minutes 30 seconds East, 620.90 feet along the centerline of Dequindre Road to its intersection with the East line of said Section 13; thence South 0 degree 34 minutes 44 seconds East, 367.91 feet to the point of beginning. Containing 1,300,152.18 square feet or 29.848 acres, more or less. Subject to rights of the public over the North 33 feet for Avon Road and the Eastern 33 feet for Dequindre Road.

SURVEYOR'S CERTIFICATION

TO: Billmore Avon LLC, a Michigan limited liability company and Fidelity National Title Insurance Company;  
 This is to certify that this map or plot and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 6a, 6b, 7a, 7b, 7c, 8, 9, 10a, 13, 14, 16, 17 and 20 of Table A thereof. The fieldwork was completed on Oct. 25, 2018.



DAVID J. VONDENBERGHE  
 PROFESSIONAL SURVEYOR  
 No. 51489

"ALTA/NSPS LAND TITLE SURVEY"

PREPARED BY:



GEODETIC DESIGNS, INC.  
 2300 N. GRAND RIVER AVE.  
 LANSING, MI 48906  
 PHONE: (517) 908-0008  
 FAX: (517) 908-0009  
 WWW.GEODETICDESIGNS.COM

| MARK | DATE | REVISION | BY | REVIEWER |
|------|------|----------|----|----------|
|      |      |          |    |          |

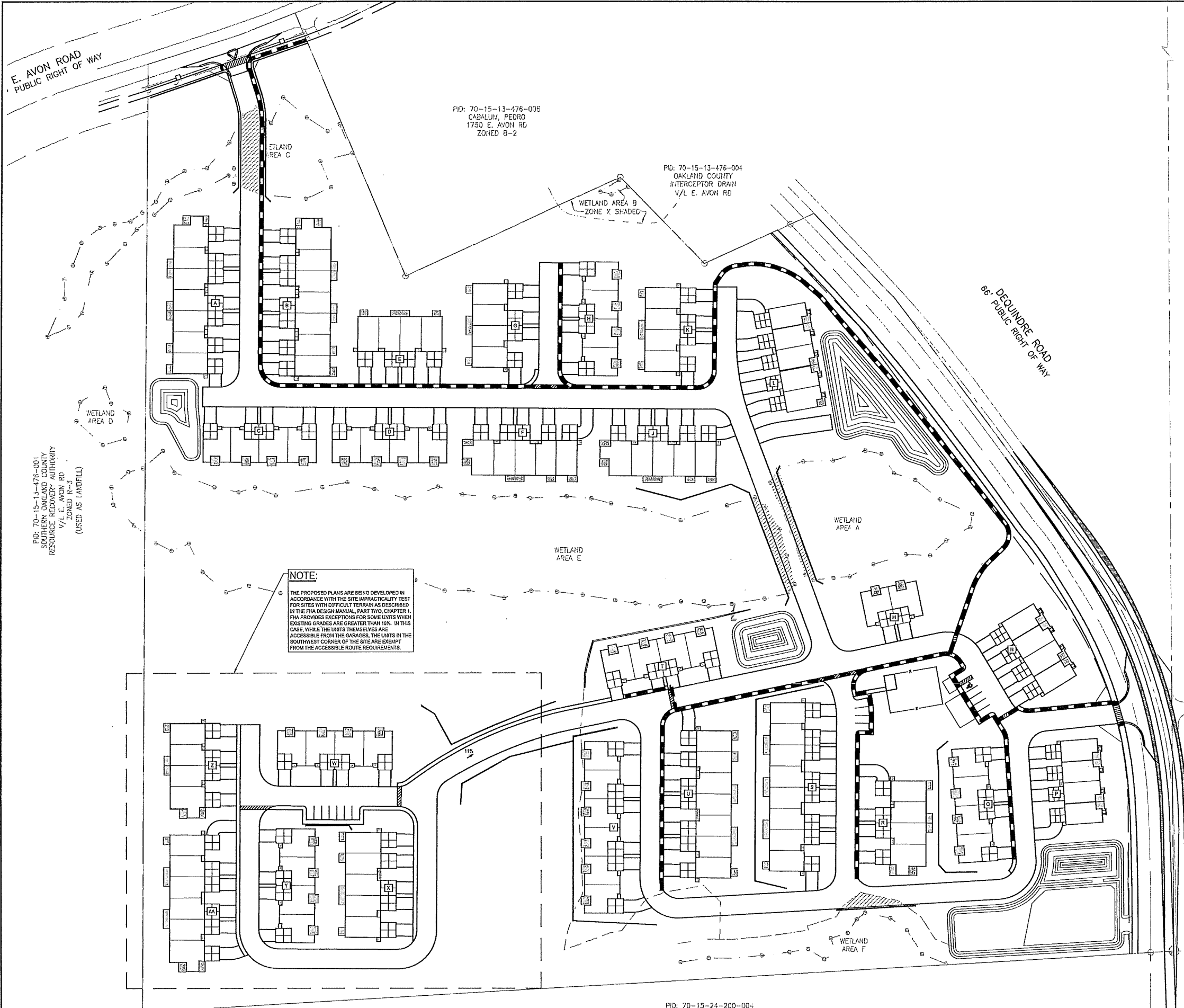
BERGMANN & ASSOCIATES

REDWOOD SITE  
 ROCHESTER HILLS, MI

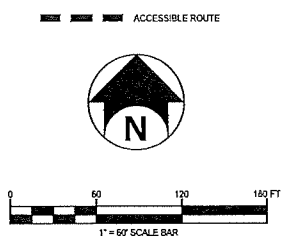
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| DATE: OCTOBER 26, 2018 |                       |
| DRAWN BY: RW           |                       |
| CHECKED BY: DJV        | JOB NUMBER: S220-2018 |



ARCH D 24x36



**SITE LEGEND:**



**NOTE:**

THE PROPOSED PLANS ARE BEING DEVELOPED IN ACCORDANCE WITH THE SITE IMPRACTICALITY TEST FOR SITES WITH DIFFICULT TERRAIN AS DESCRIBED IN THE FHA DESIGN MANUAL, PART TWO, CHAPTER 1. FHA PROVIDES EXCEPTIONS FOR SOME UNITS WHEN EXISTING GRADES ARE GREATER THAN 10%. IN THIS CASE, WHILE THE UNITS THEMSELVES ARE ACCESSIBLE FROM THE GARAGES, THE UNITS IN THE SOUTHWEST CORNER OF THE SITE ARE EXEMPT FROM THE ACCESSIBLE ROUTE REQUIREMENTS.

**NOTE:**  
THE PROPOSED PLANS ARE BEING DEVELOPED IN ACCORDANCE WITH THE SITE IMPRACTICALITY TEST FOR SITES WITH DIFFICULT TERRAIN AS DESCRIBED IN THE FHA DESIGN MANUAL, PART TWO, CHAPTER 1. FHA PROVIDES EXCEPTIONS FOR SOME UNITS WHEN EXISTING GRADES ARE GREATER THAN 10%. IN THIS CASE, WHILE THE UNITS THEMSELVES ARE ACCESSIBLE FROM THE GARAGES, THE UNITS IN THE SOUTHWEST CORNER OF THE SITE ARE EXEMPT FROM THE ACCESSIBLE ROUTE REQUIREMENTS.

PID: 70-15-13-476-001  
SOUTHERN OAKLAND COUNTY  
RESOURCE RECOVERY AUTHORITY  
V/L E. AVON RD  
ZONED R-3  
(USED AS LANDFILL)

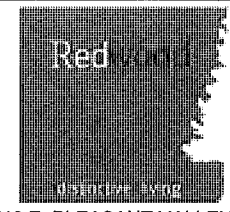
PID: 70-15-13-476-006  
CABALUM, PEDRO  
1750 E. AVON RD  
ZONED B-2

PID: 70-15-13-476-004  
OAKLAND COUNTY  
INTERCEPTOR DRAIN  
V/L E. AVON RD

PID: 70-15-24-200-004  
SOUTHERN OAKLAND COUNTY  
RESOURCE RECOVERY AUTHORITY  
1741 SCHOOL RD

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131

## B BERGMANN

ARCHITECTS ENGINEERS PLANNERS

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| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 1/16/2018  | PUD REVIEW                 |
| 03/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 06/22/2019 | 3RD REV. PER CITY COMMENTS |
| 08/22/2019 | 4TH REV. PER CITY COMMENTS |
| 09/27/2019 | STEP ONE PUD REVIEW        |

Not For Construction

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|                                  |                               |
|----------------------------------|-------------------------------|
| Prepared by:<br>P. FURTAWI, PE   | Checked by:<br>P. FURTAWI, PE |
| Designed by:<br>I. GRAHAM, PE    | Drawn by:<br>I. GRAHAM, PE    |
| Date Issued:<br>NOVEMBER 9, 2018 | Project Number:<br>12963.00   |

### SITE ACCESSIBILITY ROUTE

# C101

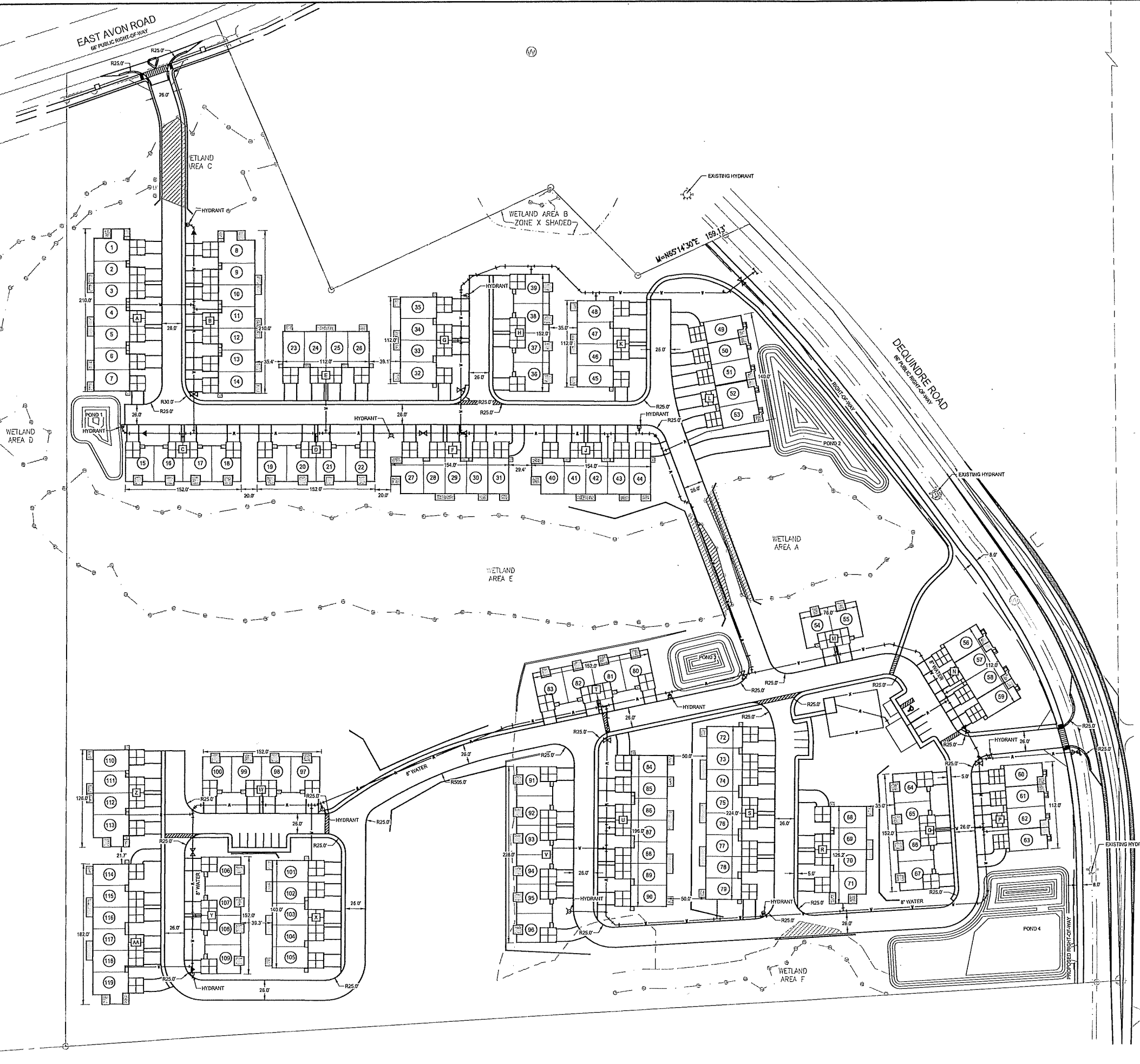
C:\Work\18092803 REDWOOD - ROCHESTER HILLS.dwg (PLOT) FILED(S) SITE ACCESSIBILITY ROUTE.dwg

8/17/2019 2:57 PM

ARCH D 24635

C:\Redwood\Projects\2013\03 REDWOOD - ROCHESTER HILLS\LD\Drawings\1 Civil\_Plot\FLESCIC102 FIRE APPARATUS PLAN.dwg

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**LEGEND:**

|      |               |
|------|---------------|
| ---  | PROPERTY LINE |
| (12) | UNIT NUMBER   |
| (A)  | BUILDING ID   |
| —v—  | WATER MAIN    |
| —H—  | HYDRANT       |
| —G—  | GATE VALVE    |
| —R—  | REDUCER       |

**BUILDING INFORMATION**

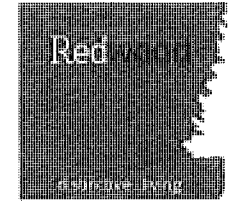
| BUILDING IDENTIFIER | BUILDING CONSTRUCTION TYPE | BUILDING SQUARE FOOTAGE |
|---------------------|----------------------------|-------------------------|
| A                   | SB                         | 12,359                  |
| B                   | SB                         | 12,389                  |
| C                   | SB                         | 5,353                   |
| D                   | SB                         | 7,138                   |
| E                   | SB                         | 6,924                   |
| F                   | SB                         | 8,930                   |
| G                   | SB                         | 5,353                   |
| H                   | SB                         | 7,138                   |
| J                   | SB                         | 8,630                   |
| K                   | SB                         | 6,924                   |
| L                   | SB                         | 7,303                   |
| M                   | SB                         | 3,569                   |
| N                   | SB                         | 6,975                   |
| P                   | SB                         | 8,764                   |
| Q                   | SB                         | 7,138                   |
| R                   | SB                         | 7,216                   |
| S                   | SB                         | 12,066                  |
| T                   | SB                         | 10,705                  |
| U                   | SB                         | 7,138                   |
| V                   | SB                         | 7,138                   |
| W                   | SB                         | 7,138                   |
| X                   | SB                         | 7,216                   |
| Y                   | SB                         | 10,643                  |
| Z                   | SB                         | 7,216                   |
| AA                  | SB                         | 10,543                  |

**FIRE DEPARTMENT NOTES:**

- FIRE LANES SHALL BE DESIGNATED BY THE FIRE CODE OFFICIAL AND SHALL BE CONSPICUOUSLY POSTED ON BOTH SIDES OF THE FIRE LANE, WITH FIRE LANE SIGNS, SPACED NOT MORE THAN 100 FEET APART. FIRE LANE SIGNS SHALL READ "NO STOPPING, STANDING, PARKING, FIRE LANE", AND SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- CONSTRUCTION SITES SHALL BE SAFEGUARDED IN ACCORDANCE WITH IFC 2008 CHAPTER 14.
- OPEN BURNING IS NOT PERMITTED INCLUDING THE BURNING OF TRASH, DEBRIS, OR LAND CLEARING MATERIALS. OPEN BURNING FOR WARMING OF SAND AND FOR WATER FOR THE PREPARATION OF MORTAR SHALL BE WITHIN THE CITY OF ROCHESTER HILLS BURN PERMIT GUIDELINES.
- A 130 SPRINKLER SYSTEM IS TO BE INSTALLED IN EACH UNIT TO MEET REQUIREMENTS OF NFPA 130 OR IBC P2904.1.

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131

## BERGMANN ARCHITECTS ENGINEERS PLANNERS

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7050 West Baginaw Hwy,  
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office: 517.272.9835  
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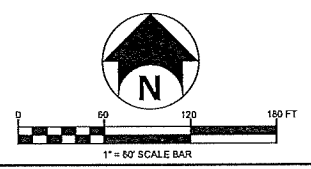
| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 1/16/2018  | PUD REVIEW                 |
| 03/04/2019 | REV. PER CITY COMMENTS     |
| 03/27/2019 | 2ND REV. PER CITY COMMENTS |
| 06/02/2019 | 3RD REV. PER CITY COMMENTS |
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| 05/27/2019 | STEP ONE PUD REVIEW        |

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|                                  |                              |
|----------------------------------|------------------------------|
| Prepared by:<br>P. FURTAW, PE    | Checked by:<br>P. FURTAW, PE |
| Designed by:<br>I. GRAMAM, PE    | Drawn by:<br>I. GRAMAM, PE   |
| Date Issued:<br>NOVEMBER 9, 2018 | Project Number:<br>12963.00  |

### FIRE APPARATUS PLAN



# C102

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,  
Landscape Architects & Surveyors, D.P.C.  
7050 West Saginaw Hwy.  
Suite 200  
Lansing, MI 48917

office: 517.272.9835  
fax: 517.272.9836

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| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/16/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 08/02/2019 | 3RD REV. PER CITY COMMENTS |
| 08/22/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE PUD REVIEW        |
| 10/04/2019 | UPDATE PRV EASEMENT NOTE   |

## UTILITY NOTES:

1. ALL WORKMANSHIP, MATERIALS, AND CONSTRUCTION PRACTICES SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF ROCHESTER HILLS OR THE AGENCY HAVING JURISDICTION OVER THE APPLICABLE UTILITY.
2. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
3. ALL FILL MATERIAL IS TO BE IN PLACE, AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
4. CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
5. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATERLINES, SANITARY LINES, STORM LINES AND GAS LINES (EXISTING AND PROPOSED), THE CONTRACTOR SHALL NOTIFY THE ENGINEER AS SOON AS THE CONFLICT IS DISCOVERED.
6. TOPS OF EXISTING UTILITY STRUCTURES SHALL BE ADJUSTED TO FINISHED GRADE.
7. EXISTING UTILITIES SHALL BE VERIFIED IN FIELD PRIOR TO INSTALLATION OF ANY NEW LINES.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE CONSTRUCTION REQUIREMENTS OF THE UTILITY OWNERS.
9. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
10. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
11. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATION AND ELEVATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE, AND GAS SERVICE. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES, IN SUCH A MANNER AS TO AVOID CONFLICTS AND ASSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH UTILITY REQUIREMENTS AS TO LOCATION AND SCHEDULING FOR TIE-IN CONNECTIONS PRIOR TO CONNECTING TO EXISTING UTILITIES.
12. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY COMPANIES AND THE OWNER'S INSPECTING AUTHORITIES.
13. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF OSHA DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION, THIS TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR OSHA.
14. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING PIPE SIZES AND INVERTS ELEVATIONS BEFORE ORDERING MANHOLE AND CATCH BASIN STRUCTURES.
15. ALL UTILITIES BELOW PAVED AREAS SHALL BE BACKFILLED WITH 100% GRANULAR MATERIAL (OR APPROVED OTHER) AND COMPACTED TO 95% OF ITS MAXIMUM UNIT WEIGHT.
16. ALL RIM ELEVATIONS IN OUTLAIN AREAS ARE APPROXIMATE ONLY AND SHALL BE ADJUSTED BY THE CONTRACTOR AFTER FINAL GRADES ARE ESTABLISHED.
17. ALL UTILITIES SHALL MAINTAIN A MINIMUM OF 10' SEPARATION FROM OTHER UTILITIES, STRUCTURES, AND RETAINING WALLS.
18. BMP'S WILL BE IMPLEMENTED DURING THE CONSTRUCTION PHASE OF THE PROPOSED PROJECT AND ANY TEMPORARY IMPACT AREAS WILL BE RESTORED TO ORIGINAL GRADES WITH ORIGINAL SOIL OR EQUIVALENT. SOILS AND SEEDED WITH CITY APPROVED WETLAND SEED.

## BASIS OF DESIGN:

- 0.60 REU / UNIT
- 118 UNITS \* 0.60 REU = 70.8 REU
- 70.8 REU \* (2.5 PEOPLE) / (90 GPD) = 15,930 GPD
- 15,930 GPD \* 0.0246 CFS = 0.394 CFS
- ASSUME 3.5 X PEAKING FACTOR = (0.0246 CFS) \* 4.0 = 0.0984 CFS PEAK

## UTILITY LEGEND:

|  |                        |
|--|------------------------|
|  | RIPRAP                 |
|  | STORM SEWER            |
|  | YARD BASIN             |
|  | CATCH BASIN            |
|  | STORM MANHOLE          |
|  | HYDRANT                |
|  | VALVE/CURB BOX         |
|  | P.I.V.                 |
|  | WATER MAIN             |
|  | SANITARY SEWER         |
|  | SANITARY SEWER MANHOLE |
|  | CLEANOUT               |

*Not For Construction*

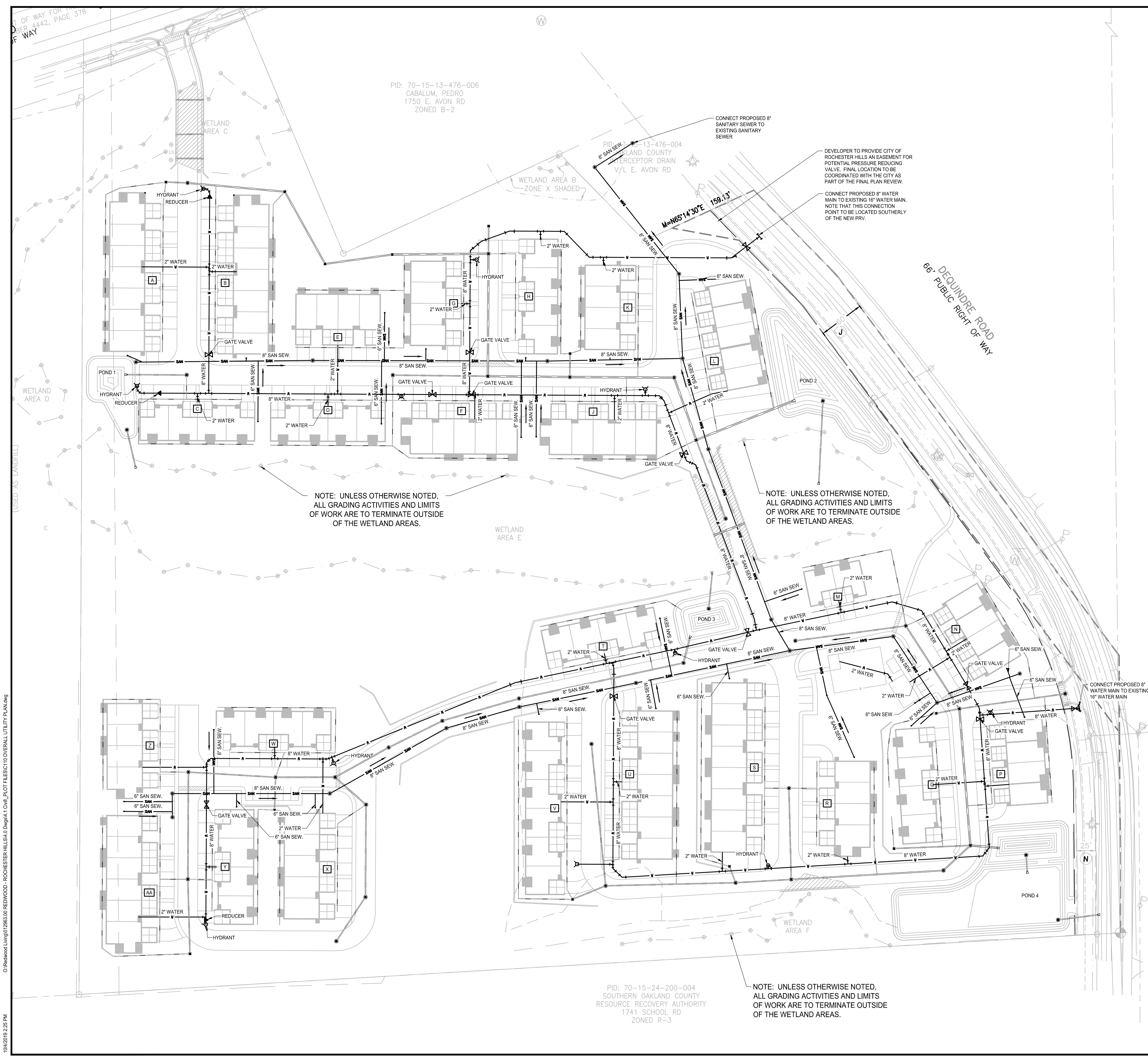
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|                                   |                              |
|-----------------------------------|------------------------------|
| Project Manager:<br>P. FURTAW, PE | Checked By:<br>P. FURTAW, PE |
| Designed By:<br>I. GRAHAM, PE     | Drawn By:<br>I. GRAHAM, PE   |
| Date Revisd:<br>NOVEMBER 9, 2018  | Project Number:<br>12963.00  |

## OVERALL UTILITY PLAN

# C110

CITY FILE #18-022 SECTION 13



PID: 70-15-13-476-006  
CABALUM, PEDRO  
1750 E. AVON RD  
ZONED B-2

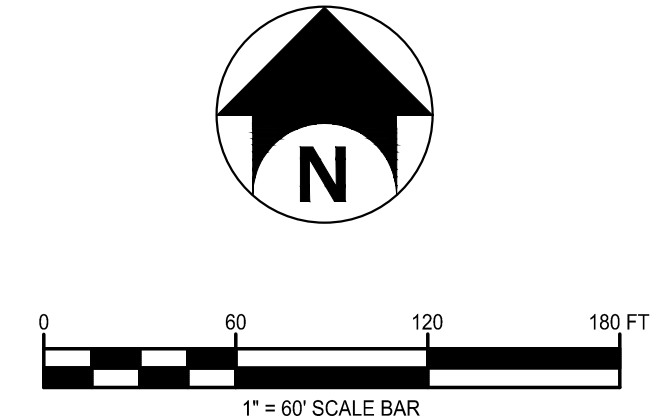
PID: 70-15-13-476-004  
LAND COUNTY  
INTERCEPTOR DRAIN  
V/L E. AVON RD

PID: 70-15-24-200-004  
SOUTHERN OAKLAND COUNTY  
RESOURCE RECOVERY AUTHORITY  
1741 SCHOOL RD  
ZONED R-3

NOTE: UNLESS OTHERWISE NOTED,  
ALL GRADING ACTIVITIES AND LIMITS  
OF WORK ARE TO TERMINATE OUTSIDE  
OF THE WETLAND AREAS.

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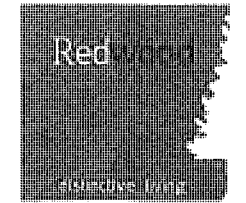
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| 03/12/2018 | 2ND REV. PER CITY COMMENTS |
| 06/12/2018 | 3RD REV. PER CITY COMMENTS |
| 09/22/2018 | 4TH REV. PER CITY COMMENTS |
| 09/27/2018 | STEP ONE PUD REVIEW        |

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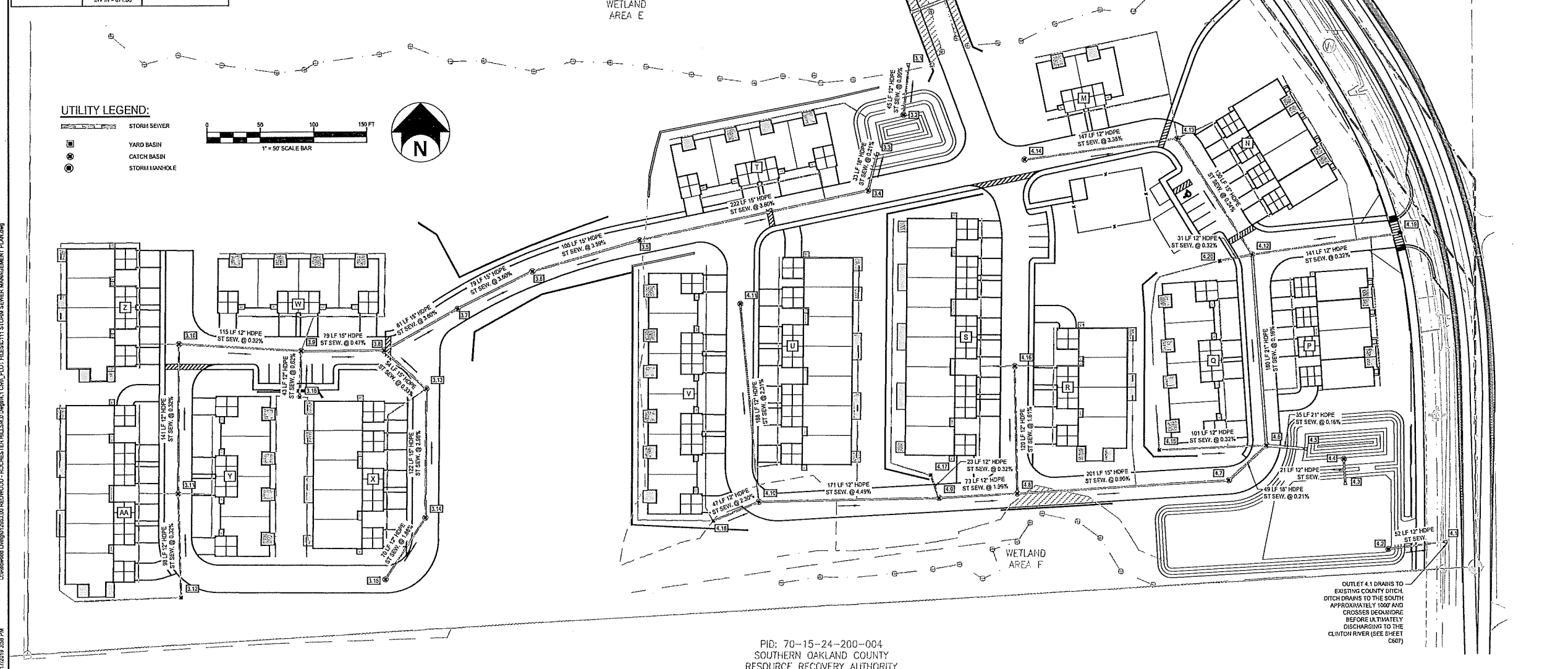
| Prepared by:     | Checked by:   |
|------------------|---------------|
| P. FURTAU, PE    | P. FURTAU, PE |
| I. GRAHAM, PE    | I. GRAHAM, PE |
| NOVEMBER 9, 2018 | 12963.00      |

## STORM SEWER MANAGEMENT PLAN - SOUTH

# C111

CITY FILE #16-022 SECTION 13

| STORM STRUCTURE TABLE |   |  | STORM STRUCTURE TABLE |   |  | LOCATION: [Blank] |               |      |         |          |                 |                 |                 |       |        |        |        |       |           |            |          |        |                  |                 |                 |        |       |
|-----------------------|---|--|-----------------------|---|--|-------------------|---------------|------|---------|----------|-----------------|-----------------|-----------------|-------|--------|--------|--------|-------|-----------|------------|----------|--------|------------------|-----------------|-----------------|--------|-------|
| STRUCTURE NAME:       | RIM ELEVATION:  | PIPES:   | STRUCTURE NAME:       | RIM ELEVATION:  | PIPES:   | LOCATION: [Blank] | Drainage Area | C    | Time of | Rainfall | Q <sub>15</sub> | Q <sub>30</sub> | Q <sub>60</sub> | IE    | IE     | L      | Actual | Size  | Manning's | Surcharged | Velocity | Travel | Rim Elevation of | Hydraulic grade | Hydraulic Grade |        |       |
| 3.10                  | RIM = 739.18<br>INV IN = 733.29<br>INV IN = 734.65<br>INV OUT = 733.29                    | 12" HDPE INV IN -733.29 S<br>6" HDPE INV IN -734.65 W<br>12" HDPE INV OUT -733.29 E                              | 4.11                  | RIM = 695.05<br>INV OUT = 687.68  | 12" HDPE INV OUT -687.68 S   | 3.12 to 3.11      | 0.40          | 0.40 | 0.76    | 15.00    | 4.35            | 0.60            | 0.00            | 0.60  | 734.05 | 733.74 | 95     | 0.32% | 12        | 2.02       | n/a      | 2.57   | 0.64             | 739.65          | 709.27          | 706.96 | 29.38 |
| 3.1                   | RIM = 739.52<br>INV IN = 733.74<br>INV IN = 735.42<br>INV OUT = 733.74                    | 12" HDPE INV IN -733.74 S<br>6" HDPE INV IN -735.42 W<br>12" HDPE INV OUT -733.74 N                              | 4.12                  | RIM = 676.79<br>INV IN = 672.36<br>INV IN = 671.93<br>INV IN = 671.93<br>INV OUT = 671.85 | 15" HDPE INV IN -672.36 NW<br>6" HDPE INV IN -671.93 E<br>12" HDPE INV IN -671.93 W<br>21" HDPE INV OUT -671.85 S  | 3.11 to 3.10      | 0.40          | 0.68 | 0.69    | 15.64    | 4.27            | 1.62            | 0.00            | 2.63  | 733.74 | 733.29 | 141    | 0.52% | 12        | 2.02       | 2.63     | 2.57   | 0.70             | 739.65          | 708.95          | 708.19 | 30.96 |
| 3.11                  | RIM = 735.65<br>INV IN = 735.75<br>INV IN = 735.42<br>INV OUT = 733.74                    | 6" HDPE INV IN -735.75 W<br>12" HDPE INV IN -735.42 W<br>6" HDPE INV IN -735.42 E<br>12" HDPE INV OUT -733.74 N  | 4.13                  | RIM = 677.92<br>INV IN = 672.92<br>INV IN = 673.42<br>INV IN = 673.42<br>INV OUT = 672.67 | 12" HDPE INV IN -672.92 W<br>6" HDPE INV IN -673.42 NE<br>6" HDPE INV IN -673.42 NE<br>15" HDPE INV OUT -672.67 SE | 3.10 to 3.9       | 0.45          | 1.96 | 0.67    | 16.34    | 4.19            | 1.75            | 0.79            | 5.17  | 733.29 | 732.92 | 115    | 0.32% | 12        | 2.02       | 5.17     | 6.66   | 0.29             | 733.10          | 708.19          | 705.77 | 30.99 |
| 3.12                  | RIM = 735.65<br>INV IN = 735.75<br>INV OUT = 734.05                                       | 6" HDPE INV IN -735.75 W<br>12" HDPE INV OUT -734.05 N   | 4.14                  | RIM = 683.92<br>INV OUT = 677.85  | 12" HDPE INV OUT -677.85 E   | 3.9 to 3.6        | 0.31          | 1.67 | 0.57    | 16.63    | 4.16            | 1.12            | 2.19            | 8.45  | 725.79 | 725.42 | 79     | 0.47% | 15        | 4.43       | 8.48     | 6.91   | 0.29             | 733.64          | 705.77          | 704.41 | 31.27 |
| 3.13                  | RIM = 735.47<br>INV IN = 725.60<br>INV IN = 726.10<br>INV OUT = 725.60                    | 15" HDPE INV IN -725.60 S<br>6" HDPE INV IN -726.10 SW<br>15" HDPE INV OUT -725.60 NW                            | 4.15                  | RIM = 675.78<br>INV IN = 672.50<br>INV OUT = 672.50                                       | 6" HDPE INV IN -672.50 E<br>12" HDPE INV OUT -672.50 E   | 3.6 to 3.5        | 0.07          | 2.04 | 0.91    | 17.09    | 4.10            | 0.26            | 0.00            | 9.59  | 708.78 | 705.00 | 105    | 3.60% | 15        | 12.26      | n/a      | 9.99   | 0.18             | 735.12          | 696.65          | 694.87 | 17.47 |
| 3.14                  | RIM = 736.90<br>INV IN = 729.50<br>INV OUT = 729.50                                       | 12" HDPE INV IN -729.50 SW<br>15" HDPE INV OUT -729.50 N   | 4.16                  | RIM = 681.51<br>INV IN = 677.01<br>INV OUT = 678.13                                       | 6" HDPE INV IN -677.01 W<br>6" HDPE INV IN -677.01 E<br>12" HDPE INV OUT -678.13 S                                 | 3.5 to 3.4        | 0.17          | 2.21 | 0.93    | 17.26    | 4.08            | 0.85            | 0.00            | 10.25 | 693.61 | 685.62 | 232    | 3.60% | 15        | 12.26      | n/a      | 9.99   | 0.37             | 702.43          | 694.87          | 695.85 | 7.56  |
| 3.15                  | RIM = 738.39<br>INV OUT = 730.81  | 12" HDPE INV OUT -730.81 NE  | 4.17                  | RIM = 680.44<br>INV IN = 678.25<br>INV OUT = 675.73                                       | 6" HDPE INV IN -678.25 W<br>12" HDPE INV OUT -675.73 S   | 3.4 to 3.3        | 0.50          | 2.51 | 0.50    | 17.63    | 4.04            | 0.97            | 0.00            | 11.22 | 665.37 | 695.30 | 33     | 0.20% | 18        | 4.70       | 11.22    | 6.35   | 0.09             | 692.12          | 696.65          | 695.50 | 3.65  |
| 3.16                  | RIM = 734.34<br>INV IN = 728.77<br>INV IN = 728.77<br>INV OUT = 728.27                    | 6" HDPE INV IN -728.77 W<br>6" HDPE INV IN -728.77 E<br>12" HDPE INV OUT -728.27 N                               | 4.18                  | RIM = 691.75<br>INV IN = 687.25<br>INV IN = 687.25<br>INV OUT = 684.43                    | 6" HDPE INV IN -687.25 W<br>6" HDPE INV IN -687.25 E<br>12" HDPE INV OUT -684.43 E                                 | 3.16 to 3.9       | 0.24          | 0.24 | 0.76    | 15.00    | 4.35            | 0.79            | 0.00            | 0.79  | 728.27 | 728.00 | 43     | 0.62% | 12        | 2.61       | n/a      | 3.57   | 0.20             | 736.34          | 705.04          | 705.77 | 29.30 |
| 3.2                   | RIM = 685.15<br>INV OUT = 681.00  | 12" HDPE INV OUT -681.00 N   | 4.19                  | RIM = 678.48<br>INV OUT = 672.38  | 12" HDPE INV OUT -672.38 W   | 4.10 to 4.9       | 0.05          | 0.90 | 0.50    | 15.76    | 4.26            | 0.51            | 0.90            | 7.99  | 673.85 | 672.15 | 201    | 0.60% | 15        | 6.13       | 7.99     | 6.51   | 0.51             | 672.11          | 676.98          | 673.90 | 4.00  |
| 3.3                   | RIM = 690.43<br>INV IN = 685.62<br>INV OUT = 685.37                                       | 15" HDPE INV IN -685.62 W<br>18" HDPE INV OUT -685.37 N  | 4.20                  | RIM = 675.10<br>INV IN = 672.37<br>INV OUT = 672.03                                       | 6" HDPE INV IN -672.37 W<br>12" HDPE INV OUT -672.03 E   | 4.9 to 4.8        | 0.05          | 0.90 | 0.50    | 15.76    | 4.26            | 0.51            | 0.90            | 7.99  | 673.85 | 672.15 | 201    | 0.60% | 15        | 6.13       | 7.99     | 6.51   | 0.51             | 672.11          | 676.98          | 673.90 | 4.00  |
| 3.4                   | RIM = 702.43<br>INV IN = 705.00<br>INV OUT = 693.61                                       | 15" HDPE INV IN -705.00 W<br>15" HDPE INV OUT -693.61 E  | 4.21                  | RIM = 674.30<br>INV OUT = 671.16  | 12" HDPE INV OUT -671.16 E   | 4.7 to 4.6        | 0.41          | 1.40 | 0.64    | 16.44    | 4.18            | 1.54            | 0.00            | 9.54  | 671.90 | 671.81 | 40     | 0.20% | 18        | 4.70       | 9.54     | 5.40   | 0.15             | 677.11          | 673.90          | 673.50 | 3.21  |
| 3.5                   | RIM = 716.12<br>INV IN = 710.60<br>INV OUT = 708.78                                       | 15" HDPE INV IN -710.60 SW<br>15" HDPE INV OUT -708.78 E   | 4.22                  | RIM = 678.48<br>INV OUT = 671.16  | 12" HDPE INV OUT -671.16 E   | 4.6 to 4.5        | 0.25          | 1.75 | 0.76    | 16.59    | 4.16            | 1.16            | 10.07           | 20.76 | 671.56 | 671.50 | 35     | 0.16% | 21        | 6.34       | 20.76    | 8.63   | 0.07             | 694.27          | 673.50          | 672.90 | 2.77  |
| 3.6                   | RIM = 725.50<br>INV IN = 722.50<br>INV OUT = 713.44                                       | 15" HDPE INV IN -722.50 SW<br>15" HDPE INV OUT -713.44 NE  | 4.23                  | RIM = 675.10<br>INV IN = 672.37<br>INV OUT = 672.03                                       | 6" HDPE INV IN -672.37 W<br>12" HDPE INV OUT -672.03 E   | 4.14 to 4.13      | 0.11          | 0.88 | 0.65    | 15.00    | 4.35            | 0.45            | 0.00            | 3.75  | 677.69 | 672.92 | 147    | 3.50% | 12        | 6.55       | n/a      | 8.34   | 0.29             | 693.92          | 680.06          | 675.09 | 3.05  |
| 3.7                   | RIM = 734.82<br>INV IN = 725.42<br>INV IN = 725.42<br>INV OUT = 725.42                    | 15" HDPE INV IN -725.42 SE<br>15" HDPE INV IN -725.42 W<br>15" HDPE INV OUT -725.42 NE                           | 4.24                  | RIM = 675.10<br>INV IN = 672.37<br>INV OUT = 672.03                                       | 6" HDPE INV IN -672.37 W<br>12" HDPE INV OUT -672.03 E   | 4.13 to 4.12      | 0.53          | 0.53 | 0.77    | 15.29    | 4.31            | 1.76            | 0.00            | 5.51  | 672.67 | 672.36 | 130    | 0.24% | 15        | 3.16       | 5.51     | 4.49   | 0.48             | 677.66          | 675.09          | 674.14 | 2.83  |
| 3.8                   | RIM = 737.04<br>INV IN = 732.97<br>INV IN = 728.00<br>INV IN = 732.97<br>INV OUT = 725.79 | 6" HDPE INV IN -732.97 N<br>12" HDPE INV IN -728.00 S<br>12" HDPE INV IN -732.97 W<br>15" HDPE INV OUT -725.79 E | 4.25                  | RIM = 675.10<br>INV IN = 672.37<br>INV OUT = 672.03                                       | 6" HDPE INV IN -672.37 W<br>12" HDPE INV OUT -672.03 E   | 4.12 to 4.6       | 0.37          | 0.65 | 0.67    | 15.78    | 4.25            | 1.37            | 2.58            | 9.46  | 671.86 | 671.57 | 159    | 0.16% | 21        | 6.34       | 9.46     | 3.93   | 0.76             | 676.76          | 674.14          | 673.50 | 2.65  |
| 3.9                   | RIM = 734.82<br>INV IN = 725.42<br>INV IN = 725.42<br>INV OUT = 725.42                    | 15" HDPE INV IN -725.42 SE<br>15" HDPE INV IN -725.42 W<br>15" HDPE INV OUT -725.42 NE                           | 4.26                  | RIM = 678.48<br>INV OUT = 671.16  | 12" HDPE INV OUT -671.16 E   | 4.19 to 4.12      | 0.26          | 0.96 | 0.74    | 16.00    | 4.55            | 0.90            | 0.00            | 1.73  | 672.31 | 671.86 | 141    | 0.32% | 12        | 2.02       | n/a      | 2.57   | 0.92             | 676.99          | 674.59          | 674.14 | 1.00  |
| 4.0                   | RIM = 683.35<br>INV IN = 683.35<br>INV OUT = 683.35                                       | 12" HDPE INV IN -683.35 W<br>12" HDPE INV IN -683.35 N<br>12" HDPE INV OUT -683.35 E                             | 4.27                  | RIM = 677.11<br>INV IN = 672.15<br>INV OUT = 671.57                                       | 15" HDPE INV IN -672.15 W<br>15" HDPE INV OUT -671.57 E  | 4.20 to 4.12      | 0.49          | 0.49 | 0.49    | 15.00    | 4.35            | 0.85            | 0.00            | 0.85  | 672.03 | 671.93 | 31     | 0.32% | 12        | 2.02       | n/a      | 2.57   | 0.20             | 671.41          | 674.24          | 674.14 | 1.17  |
| 4.1                   | RIM = 772<br>INV IN = 671.06  | 12" HDPE INV IN -671.06 W  | 4.28                  | RIM = 675.10<br>INV IN = 672.37<br>INV OUT = 672.03                                       | 6" HDPE INV IN -672.37 W<br>12" HDPE INV OUT -672.03 E   | 4.17 to 4.9       | 0.45          | 0.45 | 0.50    | 15.00    | 4.35            | 0.98            | 0.00            | 0.98  | 675.75 | 675.67 | 23     | 0.32% | 12        | 2.02       | n/a      | 2.57   | 0.15             | 650.44          | 676.76          | 676.69 | 1.66  |
|                       |   |  | 4.29                  | RIM = 680.41<br>INV IN = 674.20<br>INV OUT = 673.95                                       | 12" HDPE INV IN -674.20 N<br>12" HDPE INV IN -674.20 W<br>15" HDPE INV OUT -673.95 E                               | 4.16 to 4.8       | 0.56          | 0.56 | 0.92    | 15.00    | 4.35            | 2.32            | 0.00            | 2.32  | 676.13 | 674.21 | 120    | 1.60% | 12        | 4.61       | n/a      | 5.74   | 0.33             | 631.01          | 678.90          | 676.98 | 2.61  |
|                       |   |  | 4.30                  | RIM = 682.69<br>INV IN = 675.66<br>INV IN = 675.66<br>INV OUT = 675.66                    | 12" HDPE INV IN -675.66 W<br>12" HDPE INV IN -675.66 N<br>12" HDPE INV OUT -675.66 E                               | 4.15 to 4.6       | 0.22          | 0.22 | 0.64    | 15.00    | 4.35            | 0.61            | 0.00            | 0.61  | 672.33 | 672.06 | 101    | 0.32% | 12        | 2.02       | n/a      | 2.57   | 0.66             | 676.55          | 673.62          | 673.50 | 1.57  |
|                       |   |  | 4.31                  | RIM = 682.69<br>INV IN = 675.66<br>INV IN = 675.66<br>INV OUT = 675.66                    | 12" HDPE INV IN -675.66 W<br>12" HDPE INV IN -675.66 N<br>12" HDPE INV OUT -675.66 E                               | 4.16 to 4.10      | 0.40          | 0.40 | 0.75    | 15.00    | 4.35            | 1.27            | 0.00            | 1.27  | 684.43 | 683.35 | 47     | 2.50% | 12        | 5.40       | n/a      | 6.88   | 0.11             | 694.76          | 687.46          | 686.38 | 4.29  |



PID: 70-15-24-200-004  
SOUTHERN OAKLAND COUNTY  
RESOURCE RECOVERY AUTHORITY

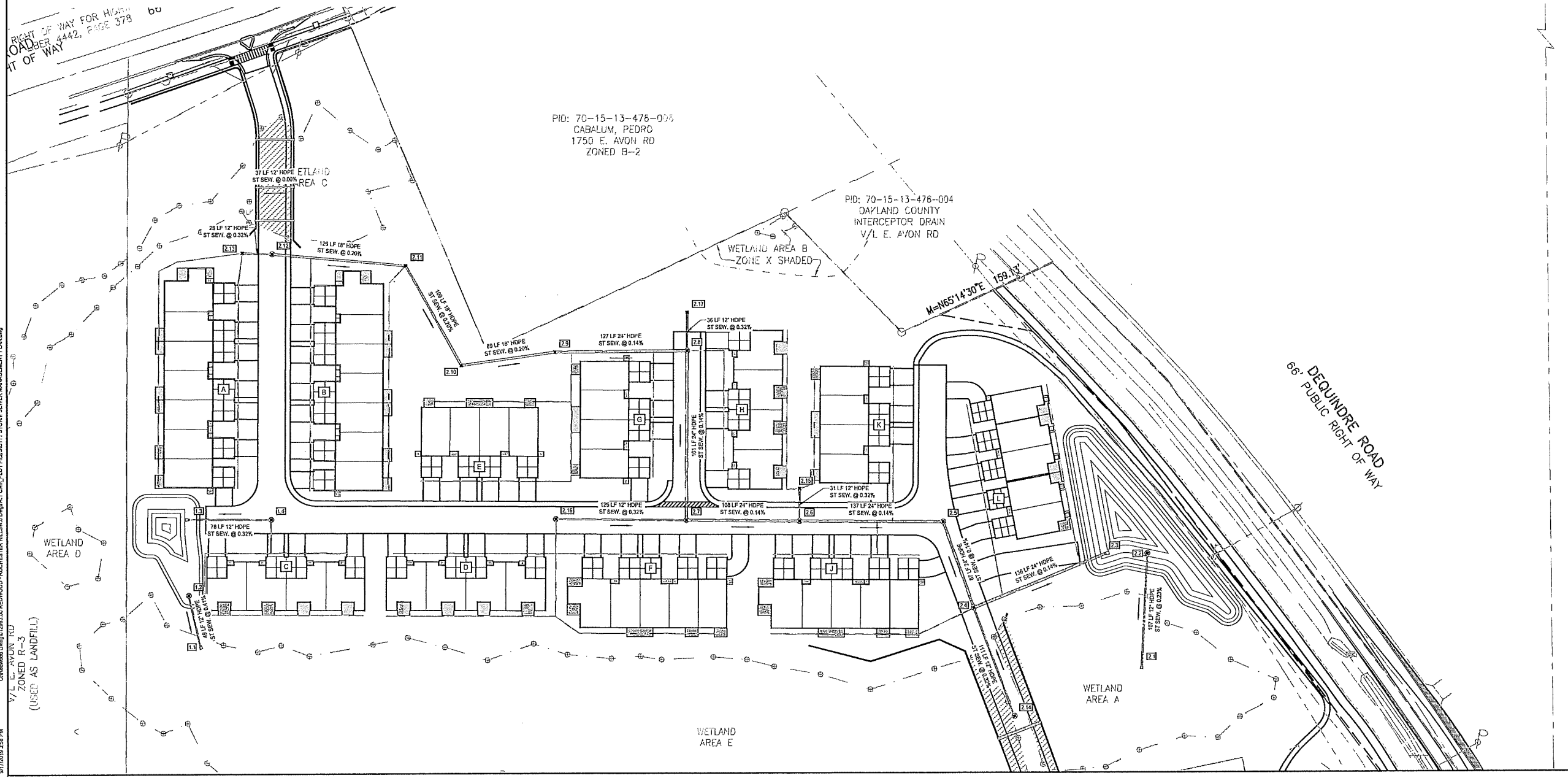
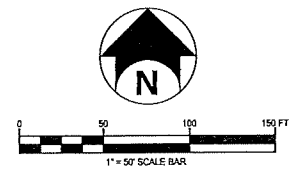
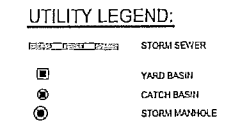
OUTLET 4.1 DRAINS TO  
EXISTING COUNTY DITCH,  
DITCH DRAINS TO THE SOUTH  
APPROXIMATELY 1500' AND  
CROSSES DECAUNORE  
BEFORE ULTIMATELY  
DISCHARGING TO THE  
CLINTON RIVER (SEE SHEET  
C607)

S:\17018\_358.PM

| STRUCTURE NAME | RIM ELEVATION  | PIPES  |
|----------------|--|--|
| 1.1            | RIM = 681.80<br>INV IN = 681.80<br>INV OUT = 682.00                    | 12" HDPE INV IN = 681.80 N   |
| 1.2            | RIM = 682.46<br>INV IN = 682.00<br>INV OUT = 682.00 S                  | 12" HDPE INV IN = 682.00 S   |
| 1.3            | RIM = 682.00<br>INV IN = 682.00<br>INV OUT = 682.00 E                  | 12" HDPE INV IN = 682.00 E   |
| 1.4            | RIM = 684.83<br>INV IN = 682.75<br>INV OUT = 682.25                    | 6" HDPE INV IN = 682.75 S<br>12" HDPE INV IN = 682.25 W                                  |
| 2.1            | RIM = 677.00<br>INV IN = 678.50<br>INV OUT = 680.74                    | 12" HDPE INV IN = 678.50 N   |
| 2.10           | RIM = 683.97<br>INV IN = 680.74<br>INV OUT = 680.74 E                  | 18" HDPE INV IN = 680.74 INV<br>18" HDPE INV OUT = 680.74 E                              |
| 2.11           | RIM = 684.87<br>INV IN = 680.96<br>INV IN = 681.50<br>INV OUT = 680.56 | 18" HDPE INV IN = 680.96 W<br>6" HDPE INV IN = 681.50 SW<br>18" HDPE INV OUT = 680.56 SE |
| 2.12           | RIM = 685.12<br>INV IN = 681.71<br>INV OUT = 681.22                    | 12" HDPE INV IN = 681.71 W<br>18" HDPE INV OUT = 681.22 E                                |
| 2.13           | RIM = 684.10<br>INV IN = 682.00<br>INV IN = 682.00<br>INV OUT = 681.80 | 6" HDPE INV IN = 682.00 S<br>6" HDPE INV IN = 682.00 E<br>12" HDPE INV OUT = 681.80 E    |
| 2.14           | RIM = 684.39<br>INV IN = 680.54<br>INV OUT = 680.54 N                  | 12" HDPE INV OUT = 680.54 N  |
| 2.15           | RIM = 684.33<br>INV IN = 680.90<br>INV IN = 680.90<br>INV OUT = 680.60 | 6" HDPE INV IN = 680.90 W<br>6" HDPE INV IN = 680.90 E<br>12" HDPE INV OUT = 680.60 S    |
| 2.16           | RIM = 685.00<br>INV IN = 618.25<br>INV OUT = 681.06                    | 6" HDPE INV IN = 618.25 S<br>12" HDPE INV OUT = 681.06 E                                 |

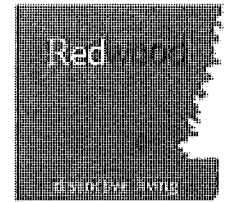
| STRUCTURE NAME | RIM ELEVATION   | PIPES   |
|----------------|---|---|
| 2.17           | RIM = 684.06<br>INV IN = 681.00<br>INV OUT = 681.00                                       | 12" HDPE INV OUT = 681.00 S   |
| 2.2            | RIM = 681.50<br>INV IN = 678.75<br>INV OUT = 678.75 S                                     | 12" HDPE INV OUT = 678.75 S   |
| 2.3            | RIM = 679.00<br>INV IN = 679.00<br>INV OUT = 679.00 W                                     | 24" HDPE INV IN = 679.00 W  |
| 2.4            | RIM = 684.92<br>INV IN = 679.19<br>INV IN = 680.19<br>INV IN = 680.90<br>INV OUT = 679.19 | 24" HDPE INV IN = 679.19 N<br>12" HDPE INV IN = 680.19 S<br>6" HDPE INV IN = 680.90 SW<br>24" HDPE INV OUT = 679.19 E |
| 2.5            | RIM = 685.46<br>INV IN = 679.31<br>INV OUT = 679.31                                       | 24" HDPE INV IN = 679.31 W<br>24" HDPE INV OUT = 679.31 S   |
| 2.6            | RIM = 685.49<br>INV IN = 680.50<br>INV IN = 679.50<br>INV OUT = 679.50                    | 12" HDPE INV IN = 680.50 N<br>24" HDPE INV IN = 679.50 W<br>24" HDPE INV OUT = 679.50 E                               |
| 2.7            | RIM = 688.84<br>INV IN = 682.66<br>INV IN = 679.66<br>INV OUT = 679.66                    | 12" HDPE INV IN = 682.66 W<br>24" HDPE INV IN = 679.66 N<br>24" HDPE INV OUT = 679.66 E                               |
| 2.8            | RIM = 684.75<br>INV IN = 679.89<br>INV IN = 681.50<br>INV IN = 680.89<br>INV OUT = 679.89 | 24" HDPE INV IN = 679.89 W<br>6" HDPE INV IN = 681.50 E<br>12" HDPE INV IN = 680.89 N<br>24" HDPE INV OUT = 679.89 S  |
| 2.9            | RIM = 683.96<br>INV IN = 680.56<br>INV OUT = 680.07                                       | 18" HDPE INV IN = 680.56 W<br>24" HDPE INV OUT = 680.07 E   |

| LOCATION from and to | Drainage Area<br>Hrmtl | Accumulated | C<br>Factor | Time of<br>Concentration | Rainfall<br>Inches | Ccfs<br>Inflow | Ccfs<br>Branch | Ccfs<br>Accumulated | IE<br>UP | IE<br>DOWN | L<br>ft | Actual<br>Slope | Size<br>Inches | Manning's<br>Capacity (cfs) | Surcharge<br>Capacity (cfs) | Velocity<br>ft/s | Travel Time<br>minutes | Rim Elevation of<br>Upstream Structure | Hydraulic grade<br>ft | Hydraulic grade<br>ft | Hydraulic Grade<br>Cover |
|----------------------|------------------------|-------------|-------------|--------------------------|--------------------|----------------|----------------|---------------------|----------|------------|---------|-----------------|----------------|-----------------------------|-----------------------------|------------------|------------------------|--|-----------------------|-----------------------|--------------------------|
| 2.13 to 2.12         | 0.44                   | 0.44        | 0.75        | 15.00                    | 4.35               | 1.44           | 0.00           | 1.44                | 681.80   | 681.71     | 56      | 0.32%           | 12             | 2.02                        | n/a                         | 2.57             | 0.18                   | 684.47                                 | 683.25                | 683.17                | 1.22                     |
| 2.12 to 2.11         | 0.45                   | 0.92        | 0.50        | 15.16                    | 4.33               | 1.93           | 0.00           | 3.37                | 681.21   | 680.95     | 123     | 0.25%           | 16             | 4.70                        | n/a                         | 2.66             | 0.81                   | 685.12                                 | 683.17                | 682.91                | 1.95                     |
| 2.11 to 2.10         | 0.25                   | 1.17        | 0.50        | 15.99                    | 4.23               | 0.63           | 0.00           | 4.00                | 680.95   | 680.74     | 162     | 0.25%           | 16             | 4.70                        | n/a                         | 2.66             | 0.68                   | 685.17                                 | 682.91                | 682.69                | 2.26                     |
| 2.10 to 2.9          | 0.29                   | 1.45        | 0.33        | 16.67                    | 4.15               | 0.96           | 0.00           | 4.36                | 680.74   | 680.56     | 23      | 0.50%           | 18             | 4.70                        | n/a                         | 2.66             | 0.56                   | 685.11                                 | 682.69                | 682.51                | 2.42                     |
| 2.9 to 2.7           | 0.52                   | 1.96        | 0.73        | 17.23                    | 4.09               | 1.55           | 0.00           | 5.91                | 680.66   | 679.88     | 127     | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 0.79                   | 685.17                                 | 682.33                | 682.11                | 2.66                     |
| 2.7 to 2.6           | 0.29                   | 2.27        | 0.95        | 18.02                    | 4.00               | 1.04           | 0.33           | 7.29                | 679.66   | 679.66     | 103     | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 1.00                   | 684.75                                 | 682.33                | 682.11                | 2.42                     |
| 2.6 to 2.5           | 0.05                   | 2.27        | 0.95        | 19.01                    | 3.90               | 0.00           | 3.29           | 10.58               | 679.66   | 679.50     | 103     | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 0.53                   | 684.84                                 | 682.11                | 681.88                | 3.06                     |
| 2.5 to 2.4           | 0.52                   | 2.79        | 0.55        | 19.55                    | 3.85               | 1.72           | 0.63           | 13.13               | 679.50   | 679.31     | 137     | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 0.55                   | 684.42                                 | 682.11                | 681.88                | 3.39                     |
| 2.4 to 2.3           | 0.30                   | 3.09        | 0.79        | 20.09                    | 3.80               | 0.00           | 0.00           | 14.03               | 679.31   | 679.19     | 67      | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 0.32                   | 684.25                                 | 681.88                | 681.31                | 3.81                     |
| 2.3 to 2.2           | 0.43                   | 3.58        | 0.56        | 20.42                    | 3.76               | 1.64           | 0.70           | 16.37               | 679.19   | 679.00     | 156     | 0.14%           | 24             | 6.46                        | n/a                         | 2.69             | 0.43                   | 684.92                                 | 681.31                | 680.60                | 3.61                     |
| 2.17 to 2.6          | 0.25                   | 0.25        | 0.50        | 15.00                    | 4.35               | 0.33           | 0.00           | 0.33                | 681.00   | 680.85     | 56      | 0.32%           | 12             | 2.02                        | n/a                         | 2.57             | 0.23                   | 684.06                                 | 682.45                | 682.33                | 1.61                     |
| 2.16 to 2.7          | 0.87                   | 0.87        | 0.87        | 16.00                    | 4.35               | 3.29           | 0.00           | 3.29                | 681.06   | 680.66     | 123     | 0.32%           | 12             | 2.02                        | 3.29                        | 4.19             | 0.50                   | 684.06                                 | 682.95                | 681.88                | 1.11                     |
| 2.15 to 2.6          | 0.25                   | 0.25        | 0.50        | 15.00                    | 4.35               | 0.63           | 0.00           | 0.63                | 680.60   | 680.50     | 51      | 0.32%           | 12             | 2.02                        | n/a                         | 2.57             | 0.20                   | 684.05                                 | 682.21                | 682.11                | 1.65                     |
| 2.14 to 2.4          | 0.17                   | 0.17        | 0.55        | 15.00                    | 4.35               | 0.70           | 0.00           | 0.70                | 680.55   | 680.19     | 111     | 0.32%           | 12             | 2.02                        | n/a                         | 2.57             | 0.72                   | 684.39                                 | 681.67                | 681.31                | 2.72                     |
| 1.4 to 1.3           | 0.71                   | 0.71        | 0.65        | 13.00                    | 4.35               | 2.66           | 0.00           | 2.66                | 682.25   | 682.00     | 76      | 0.32%           | 12             | 2.02                        | 2.66                        | 3.36             | 0.38                   | 684.30                                 | 683.23                | 682.80                | 1.16                     |



# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131

## B BERGMANN ARCHITECTS ENGINEERS PLANNERS

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7050 West Saginaw Hwy.  
Suite 200  
Lansing, MI 48917  
office: 517.272.9835  
fax: 517.272.9836  
www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/19/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 04/02/2019 | 3RD REV. PER CITY COMMENTS |
| 03/22/2019 | 4TH REV. PER CITY COMMENTS |
| 06/27/2019 | STEP ONE PUD REVIEW        |

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Landscape Architects & Surveyors, D.P.C.

| Project Manager  | Drawn By      |
|------------------|---------------|
| P. FURTAW, PE    | P. FURTAW, PE |
| L. GRAHAM, PE    | L. GRAHAM, PE |
| NOVEMBER 8, 2018 | 12963.00      |

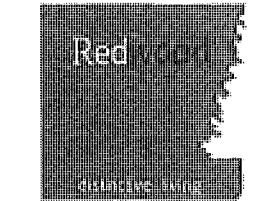
### STORM SEWER MANAGEMENT PLAN - NORTH

# C112



# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



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| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/16/2018 | PUD REVIEW                 |
| 05/04/2019 | REV. PER CITY COMMENTS     |
| 03/10/2019 | 2ND REV. PER CITY COMMENTS |
| 08/22/2019 | 3RD REV. PER CITY COMMENTS |
| 09/22/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE PUD REVIEW        |

### GRADING NOTES

- REFER TO EROSION AND SEDIMENT CONTROL PLAN FOR REQUIRED EROSION AND SEDIMENT CONTROL MEASURES.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REMOVAL OF TEMPORARY SEDIMENTATION CONTROLS. EROSION CONTROL MEASURES SHALL NOT BE REMOVED BEFORE VEGETATION HAS OCCURRED COMPLETELY.
- ALL SILT FENCE TO BE REPLACED WHENEVER THEY BECOME CLOGGED OR IMPERFORABLE AND SHALL BE REPLACED AT A MINIMUM OF EVERY 3 MONTHS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION OF TOPSOIL TO ALL DISTURBED AREAS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN EROSION CONTROL MEASURES AT ALL TIMES.
- SILT FENCE, SUTE MESH, AND/OR EROSION CONTROL BLANKETS WILL BE USED ON STEEP SLOPES AND WHEREVER NECESSARY TO CONTROL EROSION AND STABILIZATION OF EXISTING DRAINAGE SYSTEMS AS ORDERED BY THE ENGINEER OR SPECIFIED ON PLANS.
- THE CONTRACTOR SHALL DESIGNATE A MEMBER OF HIS/HER FIRM TO BE RESPONSIBLE TO MONITOR EROSION CONTROL, EROSION CONTROL STRUCTURES, TREE PROTECTION AND PRESERVATION THROUGHOUT CONSTRUCTION.
- ALL DISTURBED AREAS SHALL BE PROTECTED FROM EROSION EITHER BY MULCH OR TEMPORARY SEEDING WITHIN 2 WEEKS OF DISTURBANCE.
- ALL SITE GRADING MUST BE PERFORMED TO INSURE POSITIVE DRAINAGE ACROSS THE ENTIRE SITE, THROUGHOUT THE PERIOD OF CONSTRUCTION AND AFTER PROJECT COMPLETION.
- ALL SEDIMENTATION AND SOIL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF SITE GRADING AND MUST CONFORM TO PART 91 OF ACT 451 OF THE PUBLIC ACTS OF 1994 AS AMENDED. ALL APPLICABLE PERMITS SHALL BE OBTAINED BEFORE IMPLEMENTING THESE MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SEDIMENTATION AND SOIL EROSION CONTROL MEASURES THROUGHOUT CONSTRUCTION.
- IN GENERAL, EARTHWORK AND PAVEMENT CONSTRUCTION SHOULD BE PERFORMED IN ACCORDANCE WITH THE LATEST ADOT STANDARD SPECIFICATIONS FOR CONSTRUCTION UNLESS OTHERWISE NOTED.
- REMOVE ANY EXISTING TOPSOIL, ORGANIC SOILS, UNSUITABLE FILL, VEGETATION, TREES AND OTHER DELETERIOUS MATERIALS TO EXPOSE THE SUBGRADE SOIL. TREE ROOTS SHOULD BE COMPLETELY REMOVED.
- EXCAVATE TO THE DEPTH OF THE FINAL SUBGRADE ELEVATION TO ALLOW FOR GRADE CHANGES AND THE PLACEMENT OF THE RECOMMENDED PAVEMENT SYSTEM.
- ON SITE FILL MATERIAL CAN BE USED IF THE SPECIFIED COMPACTION REQUIREMENTS CAN BE ACHIEVED. IF ON SITE MATERIAL IS USED, IT SHOULD BE CLEAN AND FREE OF FROZEN SOIL, ORGANICS, OR OTHER DELETERIOUS MATERIALS.
- THE FINAL SUBGRADE SHOULD BE THOROUGHLY PROOFROLLED USING A LOADED TANGENT AXLE TRUCK UNDER THE OBSERVATION OF GEOTECHNICAL PAVEMENT ENGINEER. LOOSE OR YIELDING AREAS THAT CANNOT BE MECHANICALLY STABILIZED SHOULD BE REMOVED AND REPLACED WITH ENGINEERED FILL OR AS DICTATED BY FIELD CONDITIONS.
- THE AGGREGATE BASE SHOULD BE COMPACTED TO ACHIEVE A MINIMUM OF 95 PERCENT OF THE MAXIMUM MODIFIED PROCTOR DRY DENSITY. THE BASE AND SUBGRADE COMPACTION SHOULD EXTEND A MINIMUM OF 12 INCHES BEYOND THE PAVED EDGE OR BACK OF CURB.
- SMPS WILL BE IMPLEMENTED DURING THE CONSTRUCTION PHASE OF THE PROPOSED PROJECT AND ANY TEMPORARY IMPACT AREAS WILL BE RESTORED TO ORIGINAL GRADES WITH ORIGINAL SOIL OR EQUIVALENT. SOILS AND SEEDED WITH CITY APPROVED WETLAND SEED.

### GRADING LEGEND:

- 75— PROPOSED MAJOR CONTOUR
- 76— PROPOSED MINOR CONTOUR
- × TC-78.01 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- × BC-77.51 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- × TW-75.50 PROPOSED TOP OF WALL / BOTTOM OF WALL
- × 77.73 PROPOSED SPOT ELEVATION
- × EG-77.73 EXISTING ELEVATION
- × HP-77.73 PROPOSED HIGH POINT ELEVATION
- × TG-77.73 PROPOSED TOP OF GRATE ELEVATION
- × FF-77.73 FINISHED FLOOR ELEVATION
- 2.6% PROPOSED SLOPE
- 72- EXISTING CONTOUR
- - - PROPOSED SWALE

SEE SHEET C123 FOR ENLARGED GRADING PLAN

PID: 70-15-13-476-006  
CABALUM, PEDRO  
1750 E. AVON RD  
ZONED B-2

PID: 70-15-13-476-004  
OAKLAND COUNTY  
INTERCEPTOR DRAIN  
V/L E. AVON RD

SEE SHEET C122 FOR ENLARGED GRADING PLAN

SEE SHEET C121 FOR ENLARGED GRADING PLAN

PID: 70-15-24-200-004  
SOUTHERN OAKLAND COUNTY  
RESOURCE RECOVERY AUTHORITY  
1741 SCHOOL RD  
ZONED R-3

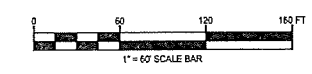
NOTE: UNLESS OTHERWISE NOTED, ALL GRADING ACTIVITIES AND LIMITS OF WORK ARE TO TERMINATE OUTSIDE OF THE WETLAND AREAS.

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NOTE: UNLESS OTHERWISE NOTED, ALL GRADING ACTIVITIES AND LIMITS OF WORK ARE TO TERMINATE OUTSIDE OF THE WETLAND AREAS.

STEEP SLOPE AREA TO BE PRESERVED

STEEP SLOPE AREA TO BE PRESERVED



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|               |                           |                 |               |
|---------------|---------------------------|-----------------|---------------|
| Project Name: | Redwood - Rochester Hills | Drawn By:       | F. FURTAW, PE |
| Client:       | L. GRAHAM, PE             | Checked By:     | L. GRAHAM, PE |
| Date:         | NOVEMBER 9, 2018          | Project Number: | 12963.00      |

### OVERALL GRADING PLAN

# C120

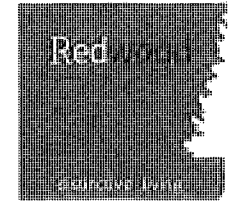
CITY FILE #18-022 SECTION 13

C:\Redwood\18022\000\00 REDWOOD - ROCHESTER HILLS\0 Dwg\41 CHA\_PLOT\_FLESCIC120 OVERALL GRADING PLAN.dwg  
8/17/2019 3:59 PM



# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131

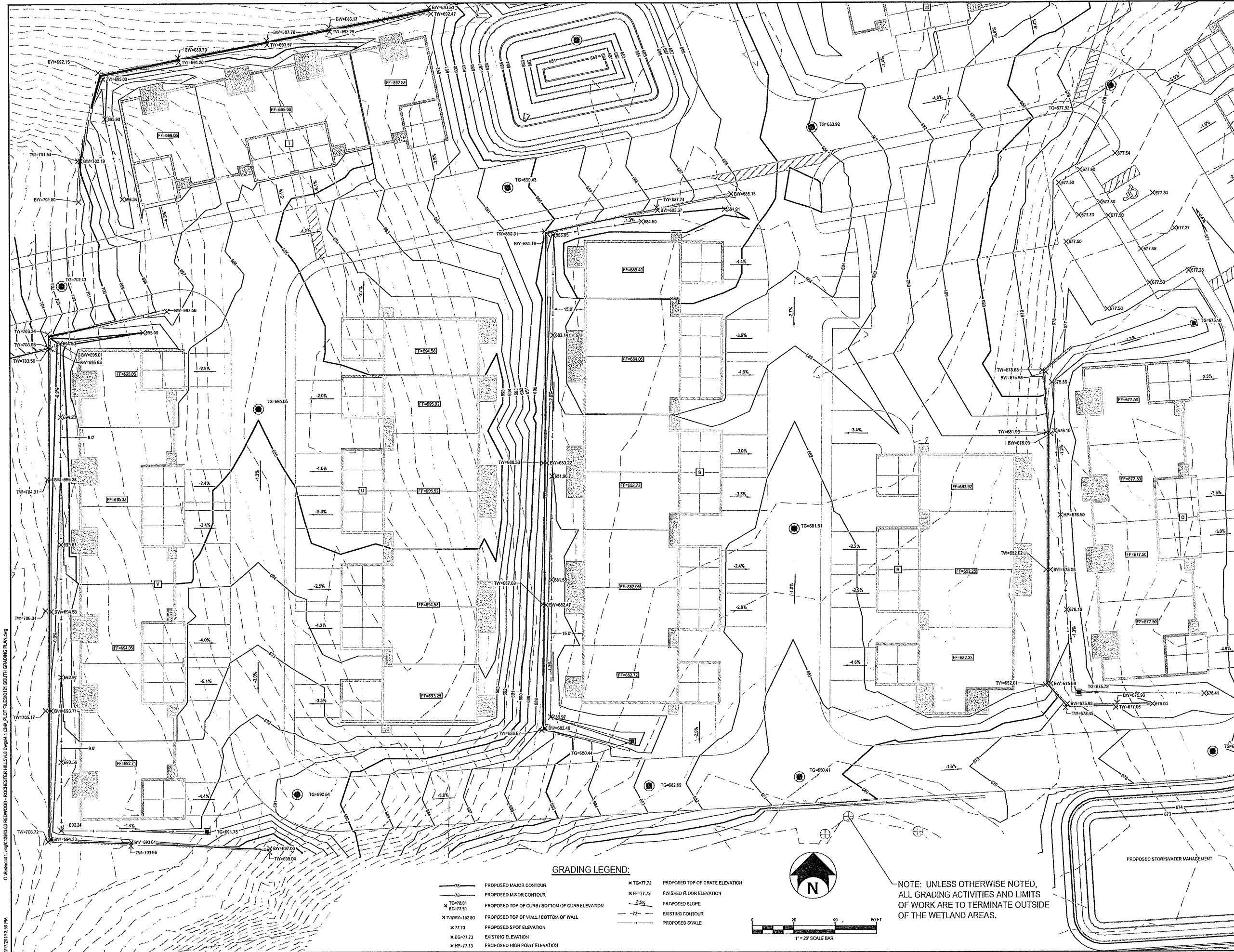


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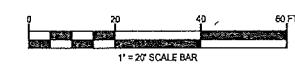
www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/16/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/12/2019 | 2ND REV. PER CITY COMMENTS |
| 06/03/2019 | 3RD REV. PER CITY COMMENTS |
| 09/22/2019 | 4TH REV. PER CITY COMMENTS |
| 09/27/2019 | STEP ONE PUD REVIEW        |



**GRADING LEGEND:**

|               |   |           |                                 |
|---------------|---|-----------|---------------------------------|
| —75—          | PROPOSED MAJOR CONTOUR                          | *TG-77.73 | PROPOSED TOP OF GRATE ELEVATION |
| -76-          | PROPOSED MINOR CONTOUR                          | *FF-77.73 | FINISHED FLOOR ELEVATION        |
| *TG-78.01     | PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION | -2.5%     | PROPOSED SLOPE                  |
| BD-77.51      | PROPOSED TOP OF WALL / BOTTOM OF WALL           | -72-      | EXISTING CONTOUR                |
| *TWBWI-152.50 | PROPOSED TOP OF WALL / BOTTOM OF WALL           | ---       | PROPOSED SWALE                  |
| *77.73        | PROPOSED SPOT ELEVATION                         |           |                                 |
| *EG-77.73     | EXISTING ELEVATION                              |           |                                 |
| *HP-77.73     | PROPOSED HIGH POINT ELEVATION                   |           |                                 |



NOTE: UNLESS OTHERWISE NOTED,  
ALL GRADING ACTIVITIES AND LIMITS  
OF WORK ARE TO TERMINATE OUTSIDE  
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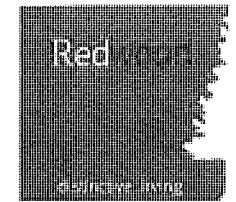
|                               |                              |
|-------------------------------|------------------------------|
| Prepared by:<br>P. FURTAW, PE | Checked by:<br>P. FURTAW, PE |
| Designed by:<br>L. GRAHAM, PE | Drawn by:<br>L. GRAHAM, PE   |
| Date:<br>NOVEMBER 9, 2018     | Project No.:<br>12953.00     |

## SOUTHEAST GRADING PLAN

# C122

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131

## B BERGMANN ARCHITECTS ENGINEERS PLANNERS

Bergmann Associates, Architects, Engineers,  
Landscape Architects & Surveyors, D.P.C.  
7050 West Saganaw Hwy.  
Suite 200  
Lansing, MI 48917

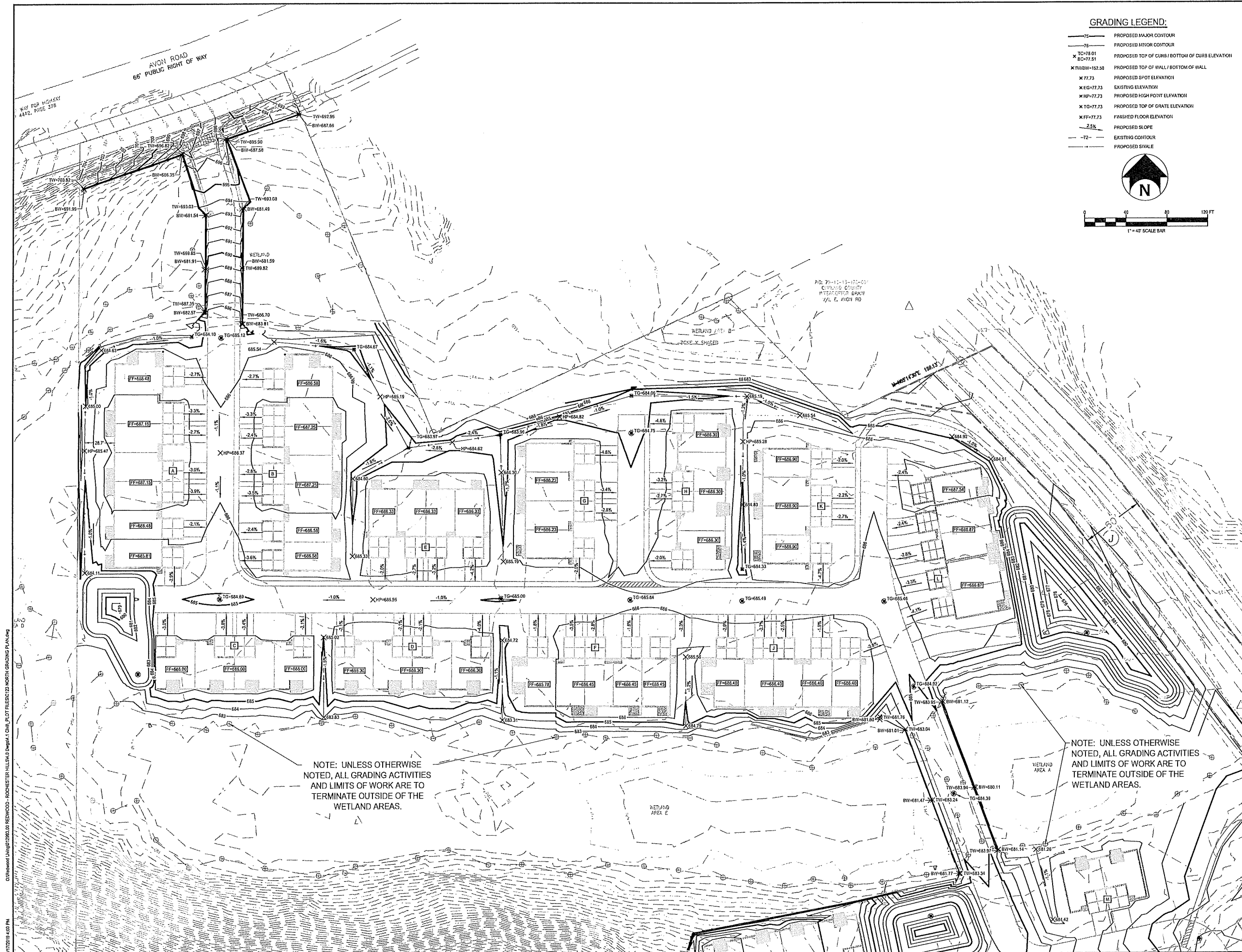
office: 517.272.9835  
fax: 517.272.8838

www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/15/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 06/20/2019 | 3RD REV. PER CITY COMMENTS |
| 08/27/2019 | 4TH REV. PER CITY COMMENTS |
| 09/27/2019 | STEP ONE PUD REVIEW        |

### GRADING LEGEND:

- 75— PROPOSED MAJOR CONTOUR
- 75— PROPOSED MINOR CONTOUR
- X TP=81.01 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- BO=77.51
- X TW=152.50 PROPOSED TOP OF WALL / BOTTOM OF WALL
- 77.73 PROPOSED SPOT ELEVATION
- X EG=77.73 EXISTING ELEVATION
- X HP=77.73 PROPOSED HIGH POINT ELEVATION
- X TG=77.73 PROPOSED TOP OF GRATE ELEVATION
- X FF=77.73 FINISHED FLOOR ELEVATION
- 2.5% PROPOSED SLOPE
- 72-- EXISTING CONTOUR
- - - - PROPOSED SWALE



NOTE: UNLESS OTHERWISE NOTED, ALL GRADING ACTIVITIES AND LIMITS OF WORK ARE TO TERMINATE OUTSIDE OF THE WETLAND AREAS.

NOTE: UNLESS OTHERWISE NOTED, ALL GRADING ACTIVITIES AND LIMITS OF WORK ARE TO TERMINATE OUTSIDE OF THE WETLAND AREAS.

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|                                  |                              |
|----------------------------------|------------------------------|
| Prepared by:<br>P. FURTAW, PE    | Checked by:<br>P. FURTAW, PE |
| Designed by:<br>I. GRAHAM, PE    | Drawn by:<br>I. GRAHAM, PE   |
| Date Issued:<br>NOVEMBER 9, 2018 | Project Number:<br>12963.00  |

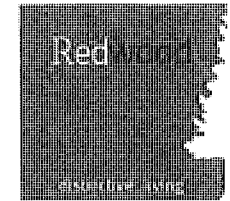
### NORTH GRADING PLAN

# C123

D:\Redwood\Living\12963.00 REDWOOD - ROCHESTER HILLS\4. DWG\4.1 Civil\_PLOT FILTERED TO NORTH GRADING PLAN.DWG 9/17/2018 4:00 PM

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY

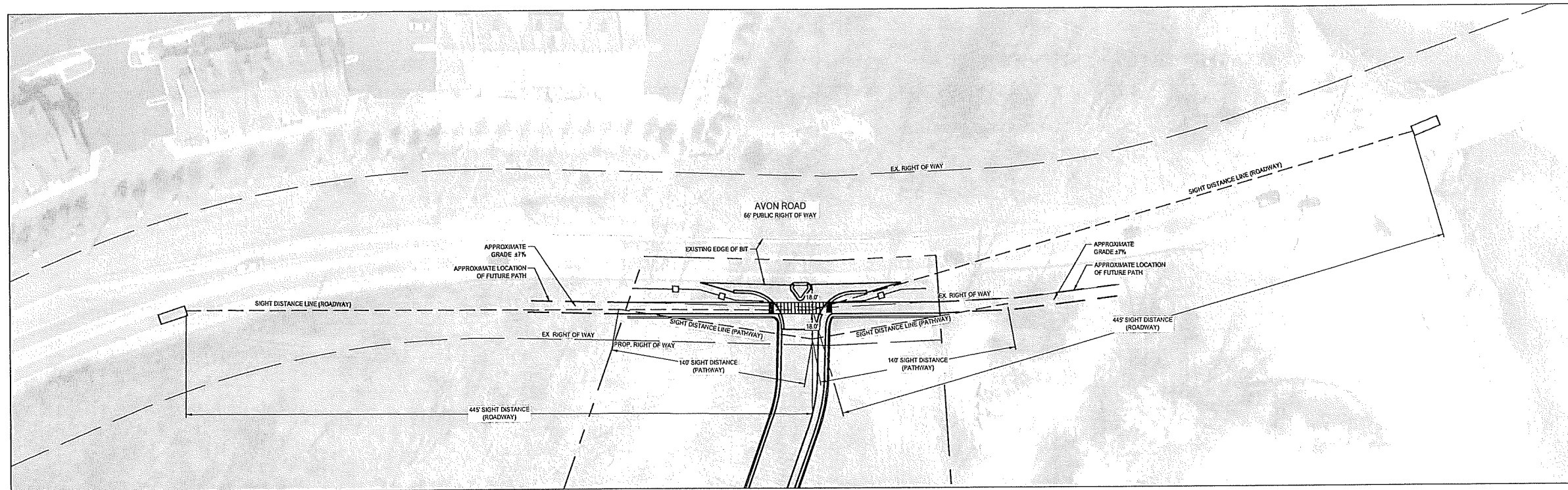


7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131



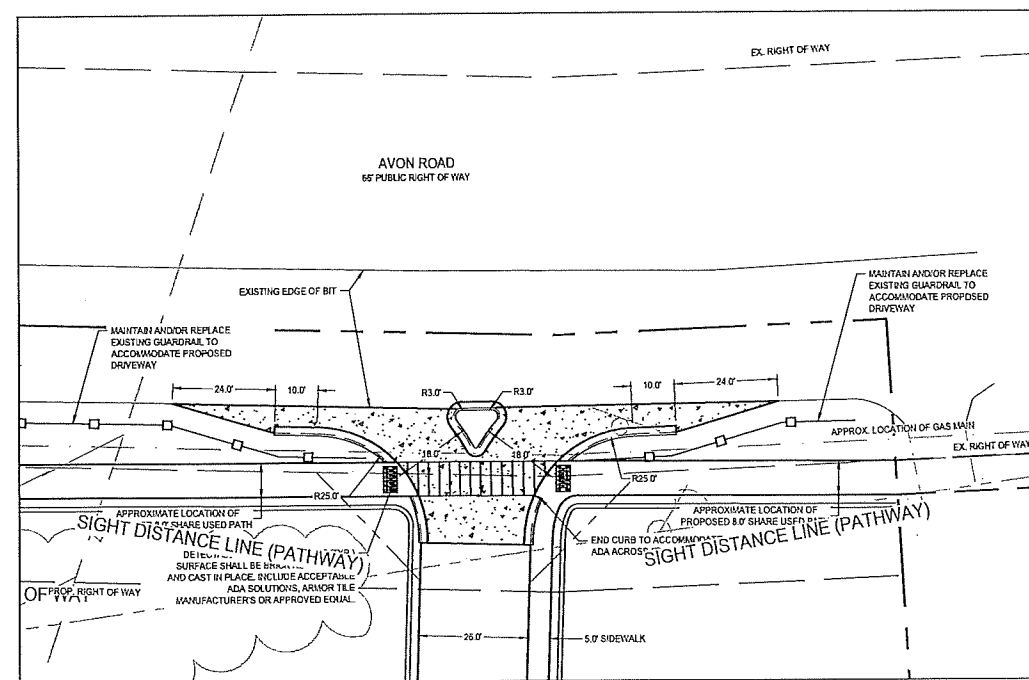
Bergmann Associates, Architects, Engineers,  
Landscape Architects & Surveyors, D.P.C.  
7050 West Saginaw Hwy,  
Suite 200  
Lansing, MI 48917  
office: 517.272.9835  
fax: 517.272.9938  
www.bergmannepc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 1/15/2018  | PLD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 06/02/2019 | 3RD REV. PER CITY COMMENTS |
| 06/22/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE FUD REVIEW        |

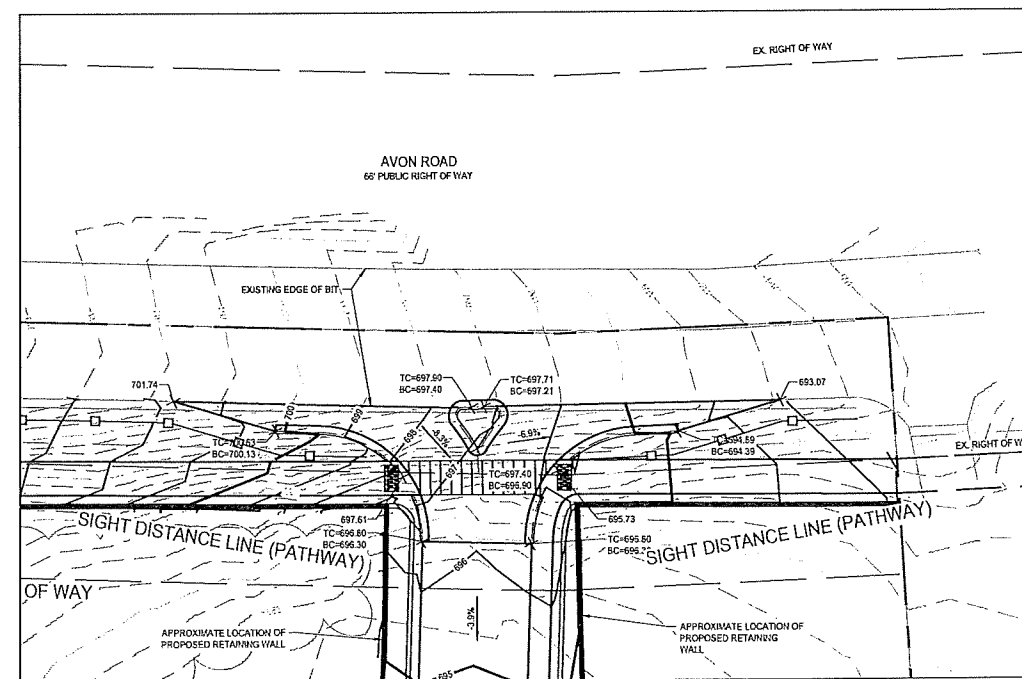


AVON ROAD SIGHT DISTANCE ENTRANCE PLAN  
SCALE 1" = 40'

SITE LEGEND:



AVON ROAD ENTRANCE SITE PLAN  
SCALE 1" = 20'



AVON ROAD ENTRANCE GRADING PLAN  
SCALE 1" = 20'



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|                                   |                              |
|-----------------------------------|------------------------------|
| Prepared By:<br>P. FURTAW, PE     | Checked By:<br>P. FURTAW, PE |
| Designed By:<br>I. GRAHAM, PE     | Drawn By:<br>I. GRAHAM, PE   |
| Date Plotted:<br>NOVEMBER 9, 2018 | Plot Number:<br>12963.00     |

AVON ROAD ENTRANCE PLAN

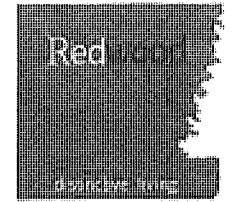
C200

CITY FILE #18-022 SECTION 13

C:\Redwood\Linings\2018\00 REDWOOD - ROCHESTER HILLS\3.0 Dwg\1. Civil\_PLOT FILES\200 AVON AND DEO ENTRANCE PLAN.dwg 9/17/2018 4:02 PM

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



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INDEPENDENCE, OH 44131

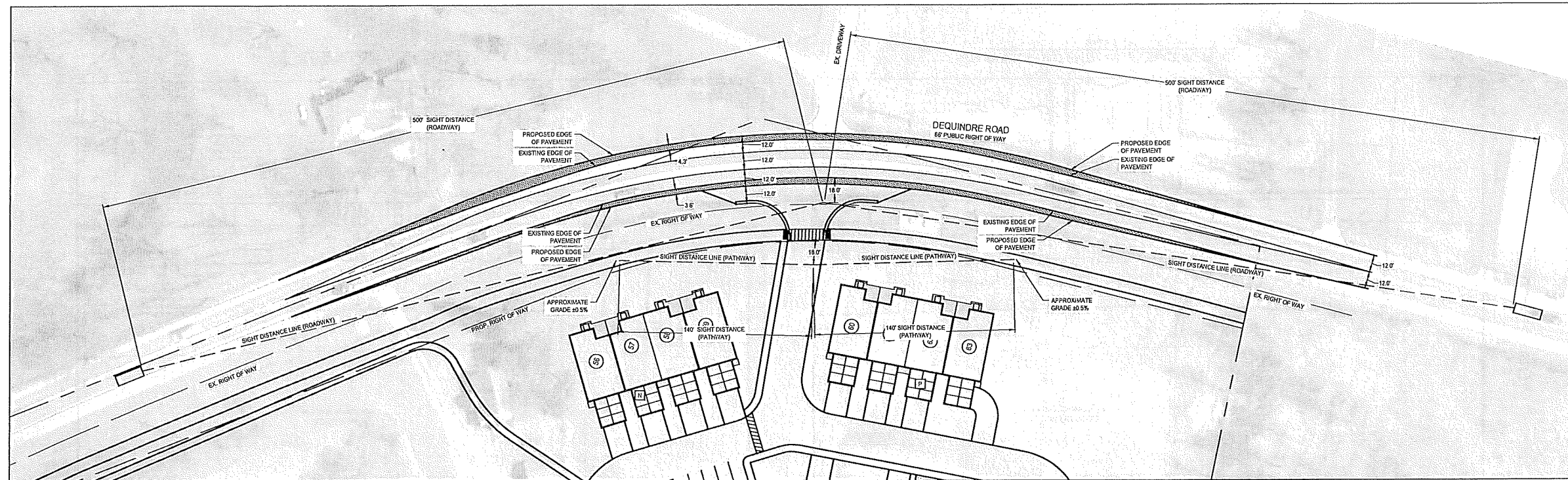
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ARCHITECTS ENGINEERS PLANNERS

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7550 West Saginaw Hwy.  
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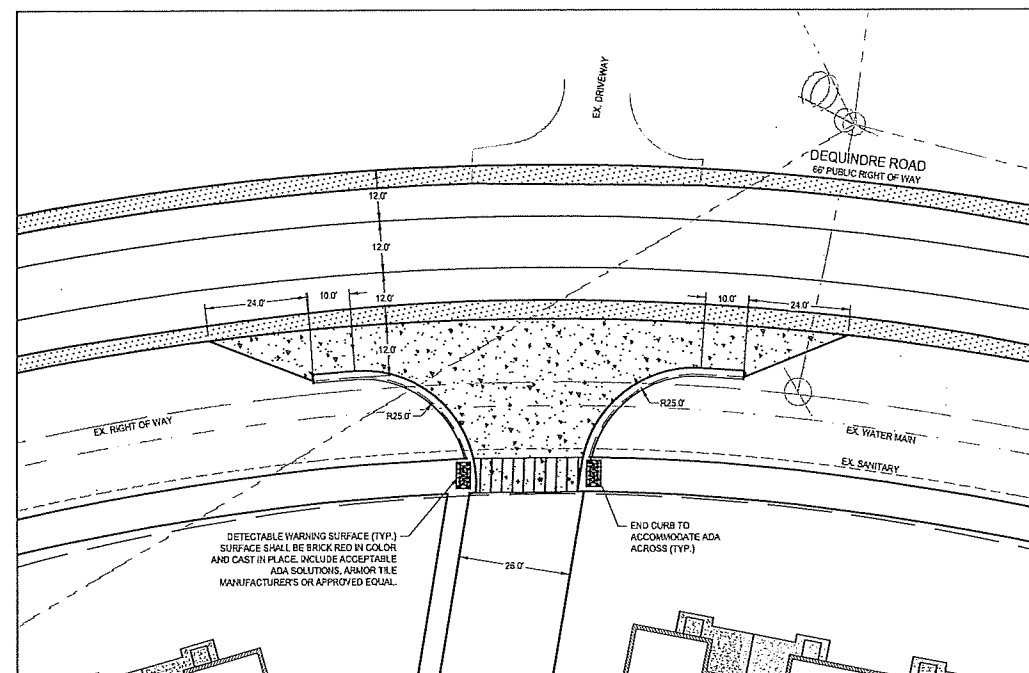
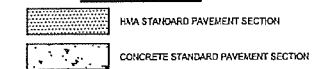
| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/16/2018 | PLD REVIEW                 |
| 03/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 05/02/2019 | 3RD REV. PER CITY COMMENTS |
| 06/27/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE PLD REVIEW        |



DEQUINDRE ROAD SIGHT DISTANCE ENTRANCE PLAN

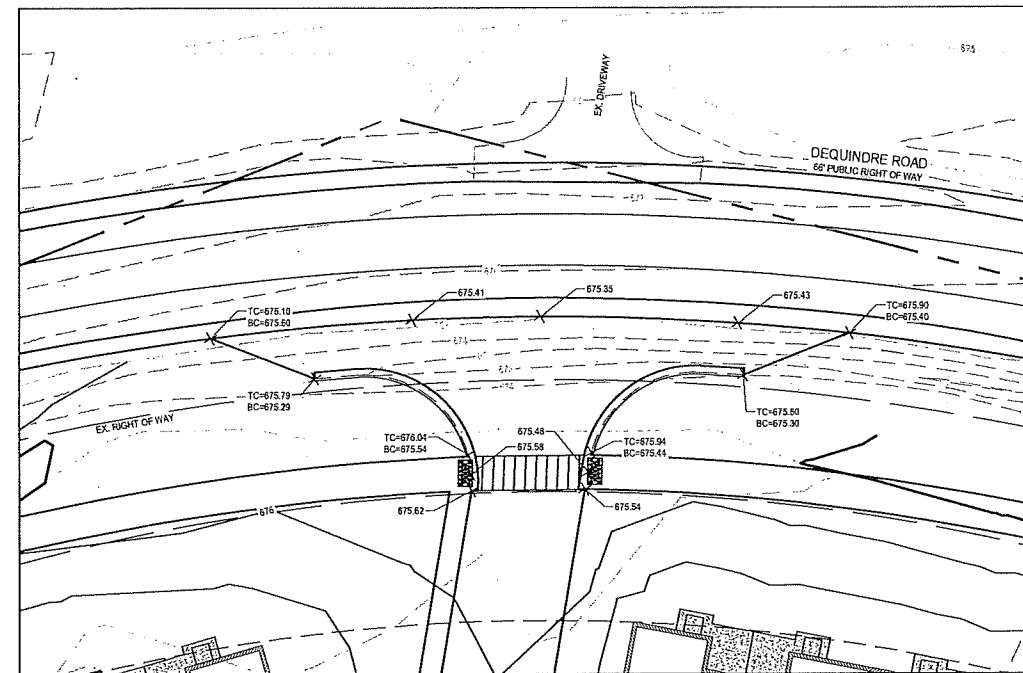
SCALE 1" = 40'

**SITE LEGEND:**



DEQUINDRE ROAD ENTRANCE SITE PLAN

SCALE 1" = 20'



DEQUINDRE ROAD ENTRANCE GRADING PLAN

SCALE 1" = 20'



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|                                    |                                    |
|------------------------------------|------------------------------------|
| Project Designer:<br>P. FURTAJ, PE | Drawn By:<br>L. GRAHAM, PE         |
| Checked By:<br>I. GRAHAM, PE       | Project Engineer:<br>L. GRAHAM, PE |
| Date Issued:<br>NOVEMBER 9, 2018   | Page Number:<br>12363.00           |

## DEQUINDRE ENTRANCE PLAN

**C201**

CITY FILE #18-022 SECTION 13

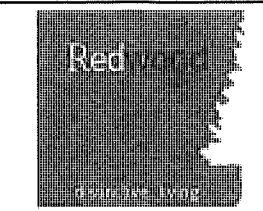
ARCH D 2408

Copyrighted Living 12063.00 REDWOOD - ROCHESTER HILLS.00 Dwg#1 L Dwg\_PLOT FILE#C300 TREE INVENTORY.dwg  
8/17/2018 4:51 PM



# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131



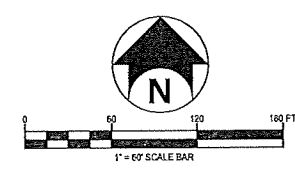
Bergmann Associates, Architects, Engineers,  
Landscape Architects & Surveyors, D.P.C.  
7150 West Saginaw Hwy.  
Suite 200  
Lansing, MI 48917  
office: 517.272.9835  
fax: 517.272.9836  
www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/19/2018 | PIU REVIEW                 |
| 03/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 06/02/2019 | 3RD REV. PER CITY COMMENTS |
| 09/22/2019 | 4TH REV. PER CITY COMMENTS |
| 09/27/2019 | 5TH REV. PER CITY COMMENTS |

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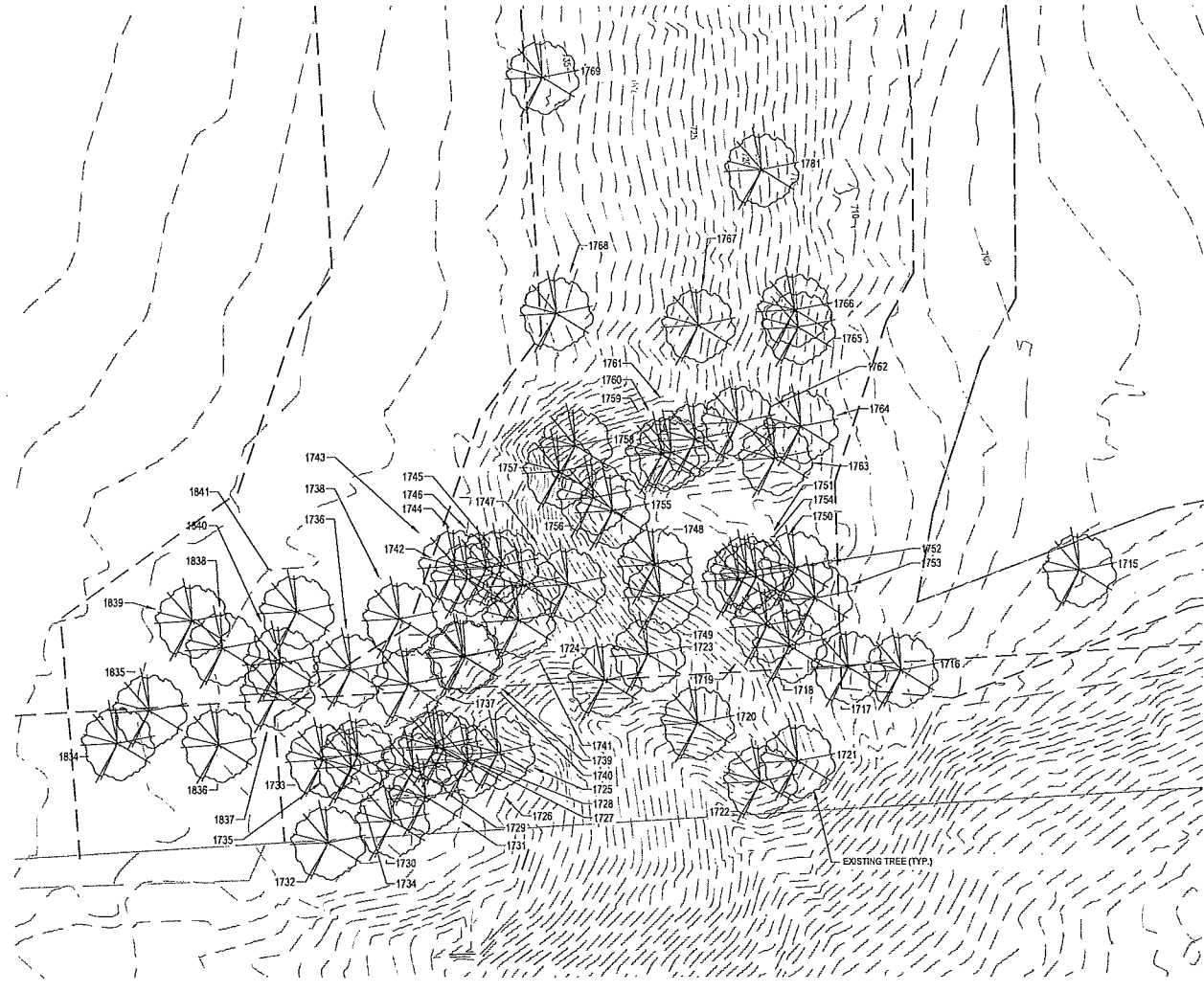
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|                                   |                              |
|-----------------------------------|------------------------------|
| Prepared By:<br>P. FURTAW, PE     | Checked By:<br>P. FURTAW, PE |
| Reviewed By:<br>L. GRAHAM, PE     | Drawn By:<br>L. GRAHAM, PE   |
| Date Plotted:<br>NOVEMBER 9, 2018 | Project Number:<br>12983.00  |



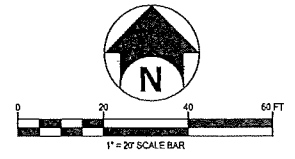
## TREE INVENTORY PLAN

**C300**  
CITY FILE #18-022 SECTION 13



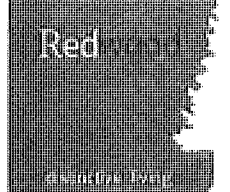
| Tag  | Scientific Name        | Common Name      | DBH1 | Condition |
|------|------------------------|------------------|------|-----------|
| 1700 | Juglans nigra          | Black Walnut     | 12.8 | Fair      |
| 1701 | Acer saccharinum       | Silver Maple     | 13.8 | Fair      |
| 1702 | Carya ovata            | Shagbark Hickory | 6.9  | Fair      |
| 1703 | Salix amygdaloides     | Peachleaf Willow | 10.9 | Fair      |
| 1704 | Salix amygdaloides     | Peachleaf Willow | 12.1 | Fair      |
| 1705 | Salix amygdaloides     | Peachleaf Willow | 8.8  | Fair      |
| 1706 | Fraxinus pennsylvanica | Green Ash        | 10.0 | Fair      |
| 1707 | Acer saccharinum       | Silver Maple     | 13.8 | Fair      |
| 1708 | Juglans nigra          | Black Walnut     | 7.3  | Fair      |
| 1709 | Juglans nigra          | Black Walnut     | 6.0  | Fair      |
| 1710 | Ulmus americana        | American Elm     | 12.7 | Fair      |
| 1711 | Juglans nigra          | Black Walnut     | 20.5 | Fair      |
| 1713 | Juglans nigra          | Black Walnut     | 14.9 | Fair      |
| 1714 | Juglans nigra          | Black Walnut     | 9.0  | Fair      |
| 1715 | Juglans nigra          | Black Walnut     | 19.4 | Fair      |
| 1716 | Tilia americana        | Basswood         | 9.5  | Fair      |
| 1717 | Tilia americana        | Basswood         | 7.8  | Fair      |
| 1718 | Tilia americana        | Basswood         | 7.8  | Fair      |
| 1719 | Tilia americana        | Basswood         | 8.0  | Fair      |
| 1720 | Quercus velutina       | Black Oak        | 42.7 | Poor      |
| 1721 | Quercus velutina       | Black Oak        | 20.9 | Fair      |
| 1722 | Quercus velutina       | Black Oak        | 9.8  | Fair      |
| 1723 | Tilia americana        | Basswood         | 7.3  | Fair      |
| 1724 | Tilia americana        | Basswood         | 22.1 | Fair      |
| 1725 | Tilia americana        | Basswood         | 10.2 | Fair      |
| 1726 | Tilia americana        | Basswood         | 7.6  | Fair      |
| 1727 | Tilia americana        | Basswood         | 7.7  | Fair      |
| 1728 | Tilia americana        | Basswood         | 7.8  | Fair      |
| 1729 | Tilia americana        | Basswood         | 7.5  | Fair      |
| 1730 | Quercus velutina       | Black Oak        | 6.2  | Fair      |
| 1731 | Quercus velutina       | Black Oak        | 27.0 | Fair      |
| 1732 | Tilia americana        | Basswood         | 9.8  | Fair      |
| 1733 | Tilia americana        | Basswood         | 8.6  | Fair      |

| Tag  | Scientific Name       | Common Name        | DBH1 | Condition |
|------|-----------------------|--------------------|------|-----------|
| 1734 | Tilia americana       | Basswood           | 6.5  | Fair      |
| 1735 | Tilia americana       | Basswood           | 7.5  | Fair      |
| 1736 | Quercus velutina      | Black Oak          | 8.0  | Fair      |
| 1737 | Quercus velutina      | Black Oak          | 6.4  | Fair      |
| 1738 | Tilia americana       | Basswood           | 11.7 | Fair      |
| 1739 | Juglans nigra         | Black Walnut       | 7.6  | Fair      |
| 1740 | Tilia americana       | Basswood           | 7.1  | Fair      |
| 1741 | Tilia americana       | Basswood           | 8.9  | Fair      |
| 1742 | Juglans nigra         | Black Walnut       | 13.5 | Fair      |
| 1743 | Tilia americana       | Basswood           | 7.5  | Fair      |
| 1744 | Tilia americana       | Basswood           | 12.2 | Fair      |
| 1745 | Tilia americana       | Basswood           | 8.0  | Fair      |
| 1746 | Juglans nigra         | Black Walnut       | 13.4 | Fair      |
| 1747 | Tilia americana       | Basswood           | 14.1 | Fair      |
| 1748 | Populus deltoides     | Eastern Cottonwood | 12.4 | Fair      |
| 1749 | Acer saccharum        | Sugar Maple        | 6.3  | Fair      |
| 1750 | Populus deltoides     | Eastern Cottonwood | 12.2 | Fair      |
| 1751 | Tilia americana       | Basswood           | 10.7 | Fair      |
| 1752 | Tilia americana       | Basswood           | 7.4  | Fair      |
| 1753 | Tilia americana       | Basswood           | 9.1  | Fair      |
| 1754 | Tilia americana       | Basswood           | 6.6  | Fair      |
| 1755 | Tilia americana       | Basswood           | 8.3  | Fair      |
| 1756 | Juglans nigra         | Black Walnut       | 10.0 | Fair      |
| 1757 | Juglans nigra         | Black Walnut       | 10.5 | Fair      |
| 1758 | Juglans nigra         | Black Walnut       | 7.9  | Fair      |
| 1759 | Juglans nigra         | Black Walnut       | 7.9  | Fair      |
| 1760 | Juglans nigra         | Black Walnut       | 12.8 | Fair      |
| 1761 | Quercus velutina      | Black Oak          | 11.3 | Fair      |
| 1762 | Quercus velutina      | Black Oak          | 9.1  | Fair      |
| 1763 | Tilia americana       | Basswood           | 8.6  | Fair      |
| 1764 | Morus alba            | White Mulberry     | 9.4  | Fair      |
| 1765 | Juglans nigra         | Black Walnut       | 7.5  | Fair      |
| 1766 | Juglans nigra         | Black Walnut       | 10.0 | Fair      |
| 1767 | Juglans nigra         | Black Walnut       | 15.9 | Fair      |
| 1768 | Juglans nigra         | Black Walnut       | 14.0 | Fair      |
| 1769 | Quercus macrocarpa    | Bur Oak            | 22.6 | Fair      |
| 1770 | Juglans nigra         | Black Walnut       | 20.4 | Fair      |
| 1771 | Quercus velutina      | Black Oak          | 16.0 | Fair      |
| 1772 | Juglans nigra         | Black Walnut       | 26.2 | Fair      |
| 1773 | Juglans nigra         | Black Walnut       | 16.0 | Fair      |
| 1774 | Juglans nigra         | Black Walnut       | 15.3 | Fair      |
| 1775 | Juglans nigra         | Black Walnut       | 14.1 | Fair      |
| 1776 | Juglans nigra         | Black Walnut       | 24.2 | Fair      |
| 1777 | Quercus velutina      | Black Oak          | 16.0 | Fair      |
| 1778 | Quercus velutina      | Black Oak          | 14.8 | Fair      |
| 1779 | Quercus velutina      | Black Oak          | 16.1 | Fair      |
| 1780 | Quercus velutina      | Black Oak          | 35.8 | Fair      |
| 1781 | Quercus velutina      | Black Oak          | 14.0 | Fair      |
| 1782 | Juglans nigra         | Black Walnut       | 31.2 | Fair      |
| 1783 | Quercus velutina      | Black Oak          | 14.5 | Fair      |
| 1784 | Quercus velutina      | Black Oak          | 28.4 | Fair      |
| 1785 | Quercus velutina      | Black Oak          | 20.3 | Fair      |
| 1786 | Quercus velutina      | Black Oak          | 25.8 | Fair      |
| 1787 | Quercus velutina      | Black Oak          | 22.6 | Fair      |
| 1788 | Quercus velutina      | Black Oak          | 21.6 | Fair      |
| 1789 | Juglans nigra         | Black Walnut       | 27.9 | Fair      |
| 1790 | Juglans cinerea       | Butternut          | 8.0  | Fair      |
| 1791 | Malus pumila          | Apple              | 9.0  | Fair      |
| 1792 | Picea pungens         | Blue Spruce        | 22.5 | Fair      |
| 1793 | Picea pungens         | Blue Spruce        | 30.8 | Fair      |
| 1794 | Picea pungens         | Blue Spruce        | 19.2 | Fair      |
| 1795 | Platanus occidentalis | Sycamore           | 29.9 | Fair      |
| 1796 | Ulmus americana       | American Elm       | 7.2  | Fair      |
| 1797 | Picea pungens         | Blue Spruce        | 23.8 | Fair      |
| 1798 | Magnolia soulangeana  | Magnolia           | 13.7 | Fair      |
| 1799 | Magnolia soulangeana  | Magnolia           | 11.0 | Fair      |
| 1800 | Salix amygdaloides    | Peachleaf Willow   | 9.4  | Fair      |
| 1801 | Populus deltoides     | Eastern Cottonwood | 14.3 | Fair      |
| 1802 | Populus deltoides     | Eastern Cottonwood | 10.2 | Fair      |
| 1803 | Malus pumila          | Apple              | 6.5  | Fair      |
| 1804 | Malus pumila          | Apple              | 7.5  | Fair      |
| 1805 | Malus pumila          | Apple              | 8.6  | Fair      |
| 1806 | Malus pumila          | Apple              | 7.0  | Fair      |
| 1807 | Malus pumila          | Apple              | 6.4  | Fair      |
| 1808 | Malus pumila          | Apple              | 8.1  | Fair      |
| 1809 | Malus pumila          | Apple              | 8.6  | Fair      |
| 1810 | Malus pumila          | Apple              | 7.0  | Fair      |
| 1811 | Malus pumila          | Apple              | 6.1  | Fair      |
| 1812 | Malus pumila          | Apple              | 6.5  | Fair      |
| 1813 | Malus pumila          | Apple              | 7.5  | Fair      |
| 1814 | Malus pumila          | Apple              | 6.2  | Fair      |
| 1815 | Malus pumila          | Apple              | 7.6  | Fair      |
| 1816 | Malus pumila          | Apple              | 6.8  | Fair      |
| 1817 | Malus pumila          | Apple              | 6.1  | Fair      |
| 1818 | Malus pumila          | Apple              | 7.4  | Fair      |
| 1819 | Malus pumila          | Apple              | 7.3  | Fair      |
| 1820 | Malus pumila          | Apple              | 7.5  | Fair      |
| 1821 | Malus pumila          | Apple              | 6.7  | Fair      |
| 1822 | Carya ovata           | Shagbark Hickory   | 23.8 | Fair      |
| 1823 | Acer saccharinum      | Silver Maple       | 21.8 | Fair      |
| 1824 | Acer saccharinum      | Silver Maple       | 14.4 | Fair      |
| 1825 | Acer saccharinum      | Silver Maple       | 35.4 | Fair      |
| 1826 | Acer negundo          | Boxelder Maple     | 10.5 | Fair      |
| 1827 | Acer negundo          | Boxelder Maple     | 22.4 | Fair      |
| 1828 | Populus deltoides     | Eastern Cottonwood | 11.2 | Fair      |
| 1829 | Juglans nigra         | Black Walnut       | 10.6 | Fair      |
| 1830 | Populus deltoides     | Eastern Cottonwood | 22.8 | Fair      |
| 1831 | Quercus velutina      | Black Oak          | 37.2 | Fair      |
| 1832 | Populus deltoides     | Eastern Cottonwood | 24.4 | Fair      |
| 1833 | Quercus velutina      | Black Oak          | 33.5 | Fair      |
| 1834 | Quercus velutina      | Black Oak          | 13.7 | Fair      |
| 1835 | Quercus velutina      | Black Oak          | 17.0 | Fair      |
| 1836 | Quercus velutina      | Black Oak          | 13.8 | Fair      |
| 1837 | Quercus velutina      | Black Oak          | 8.3  | Fair      |
| 1838 | Quercus velutina      | Black Oak          | 19.7 | Fair      |
| 1839 | Quercus velutina      | Black Oak          | 12.8 | Fair      |
| 1840 | Quercus velutina      | Black Oak          | 7.1  | Fair      |
| 1841 | Quercus velutina      | Black Oak          | 17.0 | Fair      |
| 1842 | Acer saccharinum      | Silver Maple       | 13.8 | Fair      |



# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
INDEPENDENCE, OH 44131



Bergmann Associates, Architects, Engineers,  
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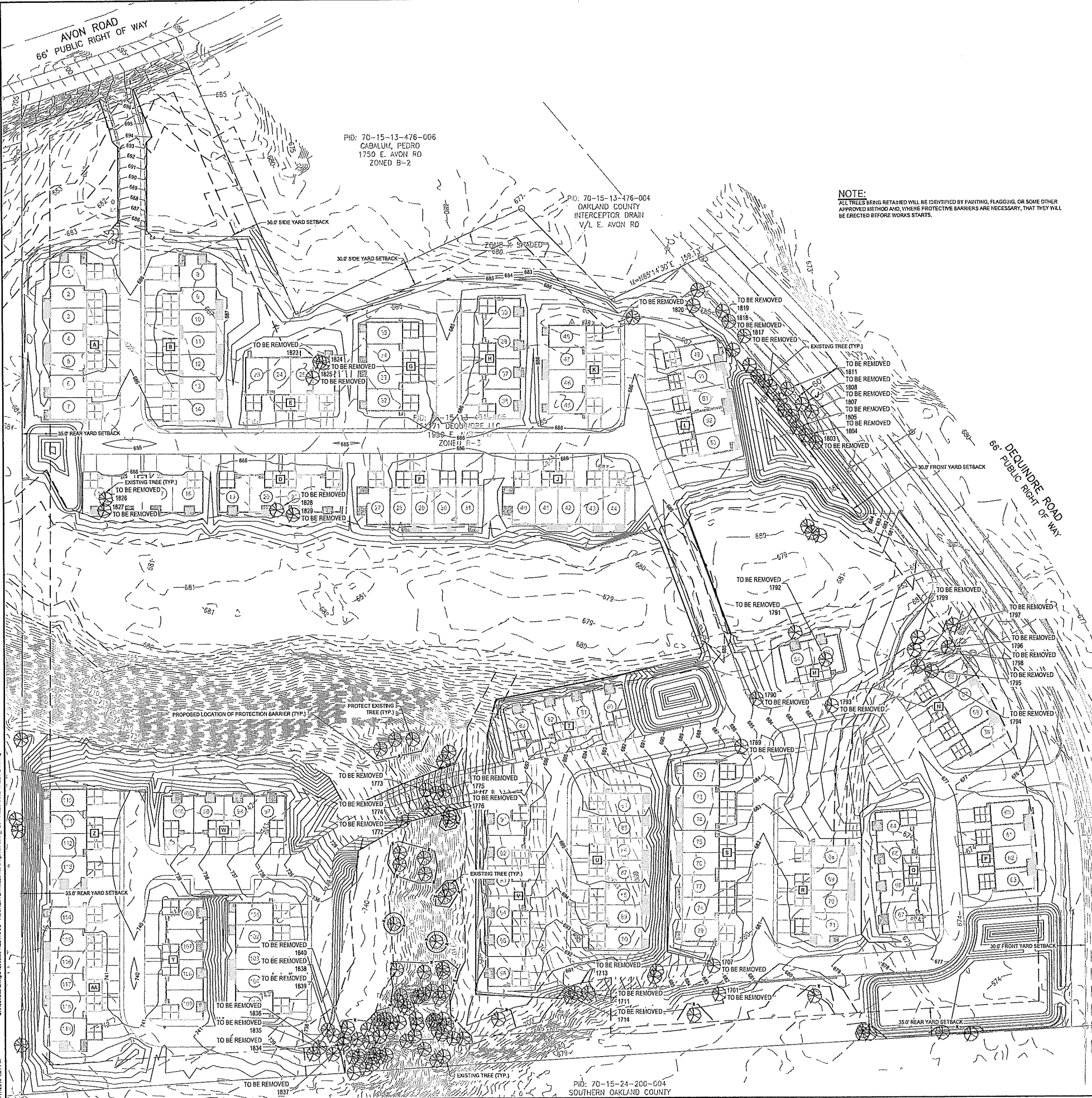
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|                                  |                               |
|----------------------------------|-------------------------------|
| Prepared By:<br>P. FURTAWE, PE   | Checked By:<br>P. FURTAWE, PE |
| Drawn By:<br>I. GRAHAM, PE       | Drawn By:<br>I. GRAHAM, PE    |
| Date Issued:<br>NOVEMBER 9, 2018 | Project Number:<br>12093.00   |

## TREE INVENTORY PLAN

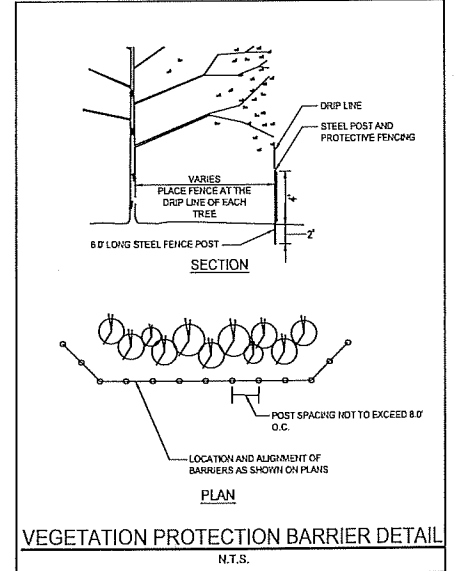
# C301



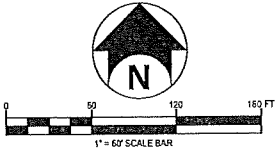


**NOTE:**  
ALL TREES BEING RETAINED WILL BE IDENTIFIED BY PAINTING, FLAGGING, OR SOME OTHER APPROVED METHOD AND, WHERE PROTECTIVE BARRIERS ARE NECESSARY, THAT THEY WILL BE ERECTED BEFORE WORKS STARTS.

| Tag                  | Scientific Name       | Common Name        | Diameter | Condition | Notes         | Replace Req'd |
|----------------------|-----------------------|--------------------|----------|-----------|---------------|---------------|
| 1701                 | Acer saccharinum      | Silver Maple       | 13.8     | Fair      | To Be Removed | X             |
| 1707                 | Acer saccharinum      | Silver Maple       | 13.8     | Fair      | To Be Removed | X             |
| 1711                 | Juglans nigra         | Black Walnut       | 20.5     | Fair      | To Be Removed | X             |
| 1713                 | Juglans nigra         | Black Walnut       | 14.9     | Fair      | To Be Removed | X             |
| 1714                 | Juglans nigra         | Black Walnut       | 9.0      | Fair      | To Be Removed | X             |
| 1772                 | Juglans nigra         | Black Walnut       | 26.2     | Fair      | To Be Removed | X             |
| 1773                 | Juglans nigra         | Black Walnut       | 16.0     | Fair      | To Be Removed | X             |
| 1774                 | Juglans nigra         | Black Walnut       | 15.3     | Fair      | To Be Removed | X             |
| 1775                 | Juglans nigra         | Black Walnut       | 14.1     | Fair      | To Be Removed | X             |
| 1776                 | Juglans nigra         | Black Walnut       | 24.2     | Fair      | To Be Removed | X             |
| 1789                 | Juglans nigra         | Black Walnut       | 27.9     | Fair      | To Be Removed | X             |
| 1790                 | Juglans cinerea       | Butternut          | 8.0      | Fair      | To Be Removed | X             |
| 1791                 | Malus pumila          | Apple              | 9.0      | Fair      | To Be Removed | X             |
| 1792                 | Picea pungens         | Blue Spruce        | 22.5     | Fair      | To Be Removed | X             |
| 1793                 | Picea pungens         | Blue Spruce        | 30.8     | Fair      | To Be Removed | X             |
| 1794                 | Picea pungens         | Blue Spruce        | 19.2     | Fair      | To Be Removed | X             |
| 1795                 | Platanus occidentalis | Sycamore           | 29.9     | Fair      | To Be Removed | X             |
| 1796                 | Ulmus americana       | American Elm       | 7.2      | Fair      | To Be Removed | X             |
| 1797                 | Picea pungens         | Blue Spruce        | 23.8     | Fair      | To Be Removed | X             |
| 1798                 | Magnolia soulangeana  | Magnolia           | 13.0     | Fair      | To Be Removed | X             |
| 1799                 | Magnolia soulangeana  | Magnolia           | 11.7     | Fair      | To Be Removed | X             |
| 1803                 | Malus pumila          | Apple              | 6.5      | Fair      | To Be Removed | X             |
| 1804                 | Malus pumila          | Apple              | 7.5      | Fair      | To Be Removed | X             |
| 1805                 | Malus pumila          | Apple              | 8.6      | Fair      | To Be Removed | X             |
| 1807                 | Malus pumila          | Apple              | 6.4      | Fair      | To Be Removed | X             |
| 1808                 | Malus pumila          | Apple              | 8.1      | Fair      | To Be Removed | X             |
| 1811                 | Malus pumila          | Apple              | 6.1      | Fair      | To Be Removed | X             |
| 1817                 | Malus pumila          | Apple              | 6.1      | Fair      | To Be Removed | X             |
| 1818                 | Malus pumila          | Apple              | 7.4      | Fair      | To Be Removed | X             |
| 1819                 | Malus pumila          | Apple              | 7.3      | Fair      | To Be Removed | X             |
| 1820                 | Malus pumila          | Apple              | 7.5      | Fair      | To Be Removed | X             |
| 1823                 | Acer saccharinum      | Silver Maple       | 21.8     | Fair      | To Be Removed | X             |
| 1824                 | Acer saccharinum      | Silver Maple       | 14.4     | Fair      | To Be Removed | X             |
| 1825                 | Acer saccharinum      | Silver Maple       | 35.4     | Fair      | To Be Removed | X             |
| 1826                 | Acer negundo          | Boxelder Maple     | 10.5     | Fair      | To Be Removed | X             |
| 1827                 | Acer negundo          | Boxelder Maple     | 22.4     | Fair      | To Be Removed | X             |
| 1828                 | Populus deltoides     | Eastern Cottonwood | 11.2     | Fair      | To Be Removed | X             |
| 1829                 | Juglans nigra         | Black Walnut       | 10.6     | Fair      | To Be Removed | X             |
| 1834                 | Quercus velutina      | Black Oak          | 13.7     | Fair      | To Be Removed | X             |
| 1835                 | Quercus velutina      | Black Oak          | 17.0     | Fair      | To Be Removed | X             |
| 1836                 | Quercus velutina      | Black Oak          | 13.8     | Fair      | To Be Removed | X             |
| 1837                 | Quercus velutina      | Black Oak          | 8.3      | Fair      | To Be Removed | X             |
| 1838                 | Quercus velutina      | Black Oak          | 19.7     | Fair      | To Be Removed | X             |
| 1839                 | Quercus velutina      | Black Oak          | 12.8     | Fair      | To Be Removed | X             |
| 1840                 | Quercus velutina      | Black Oak          | 7.1      | Fair      | To Be Removed | X             |
| Total To Be Replaced |                       |                    |          |           |               | 45            |

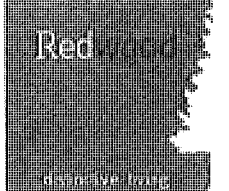


**SITE LEGEND:**  
— x — TREE PROTECTION BARRIER



# REDWOOD ROCHESTER HILLS

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|                                   |                              |
|-----------------------------------|------------------------------|
| Project Manager:<br>P. FURTAY, PE | Checked By:<br>P. FURTAY, PE |
| Designed By:<br>I. GRAHAM, PE     | Drawn By:<br>I. GRAHAM, PE   |
| Date:<br>NOVEMBER 9, 2018         | Project Number:<br>12963.00  |

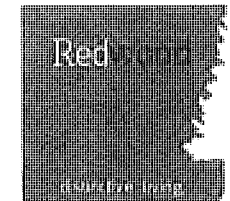
### TREE PRESERVATION PLAN

# C302



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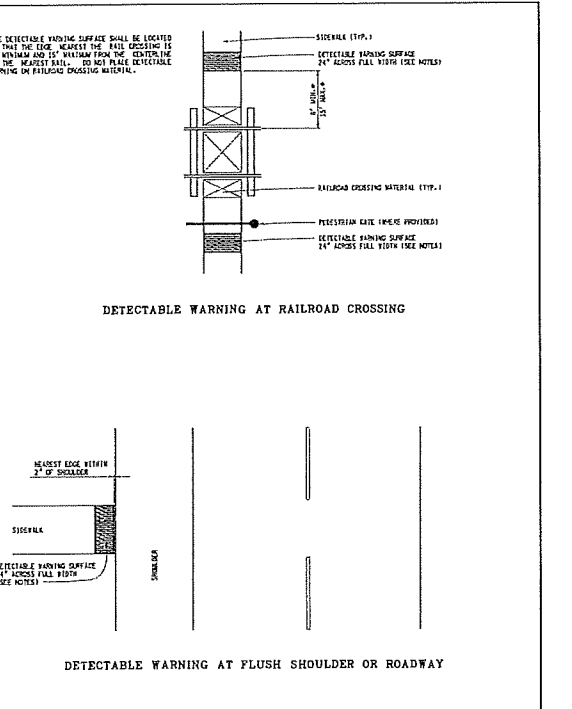
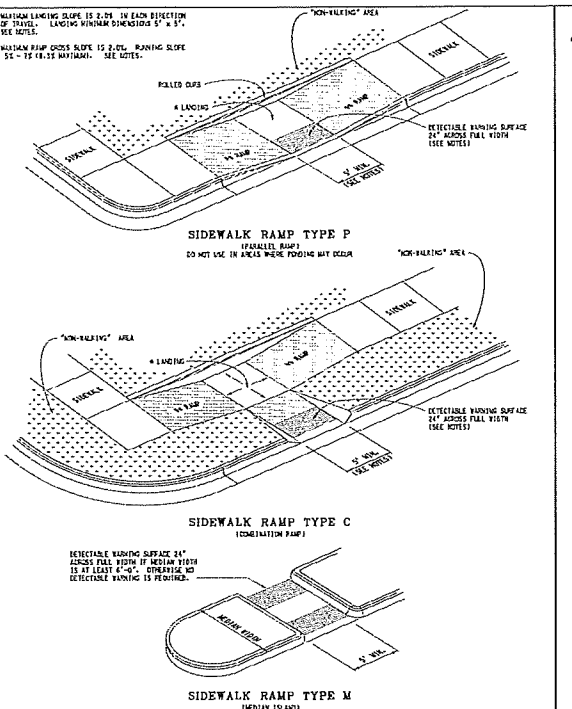
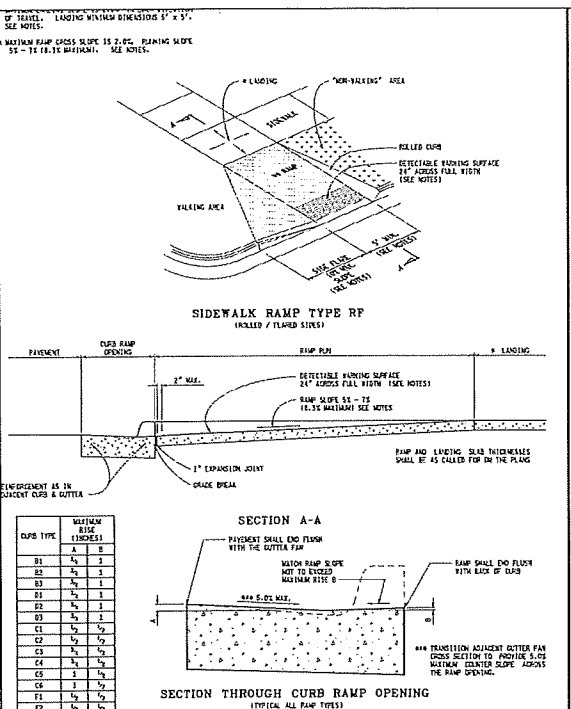
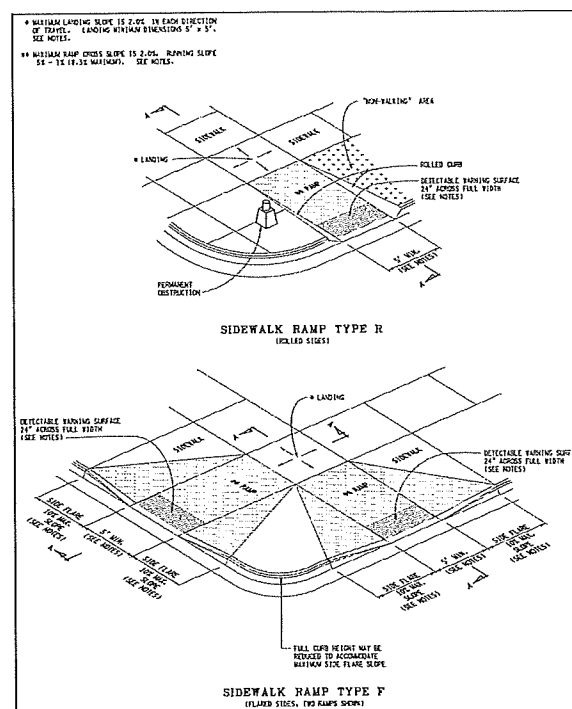
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| Prepared by:     | Checked by:     |
|------------------|-----------------|
| P. FURTAW, PE    | P. FURTAW, PE   |
| Designed by:     | Drawn by:       |
| L. GRAHAM, PE    | L. GRAHAM, PE   |
| Reviewed by:     | Project Number: |
| NOVEMBER 9, 2018 | 12853.00        |

### SITE DETAILS

# C501

CITY FILE #16-022 SECTION 13

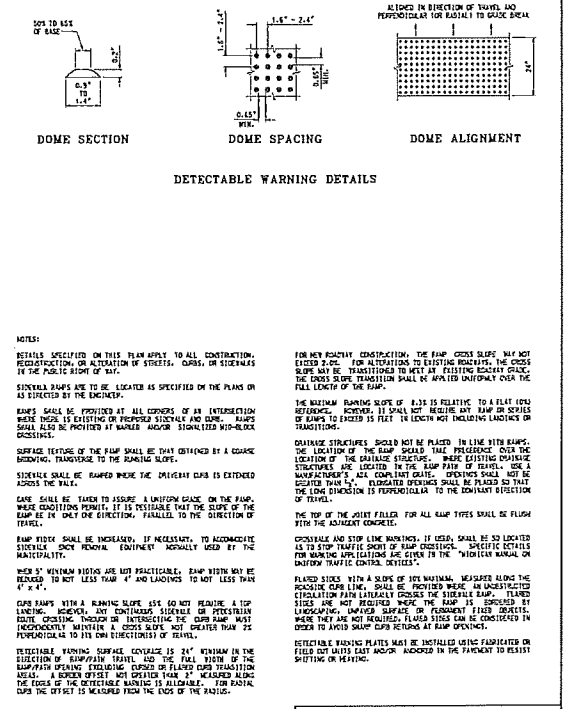
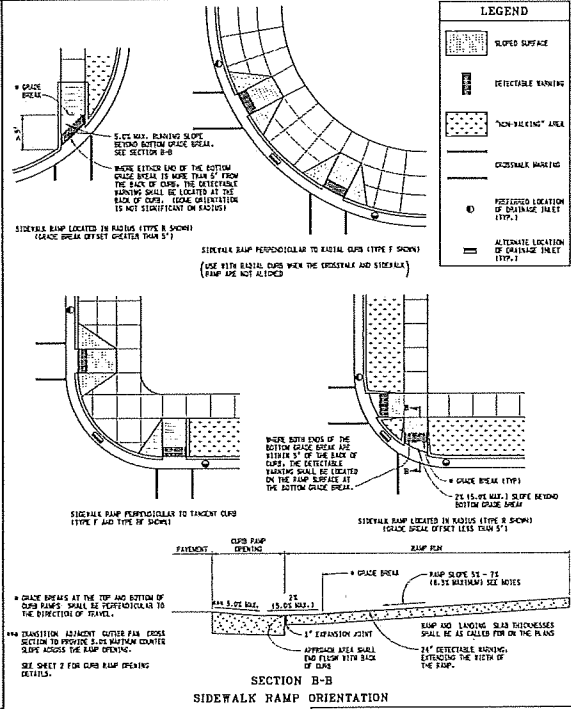
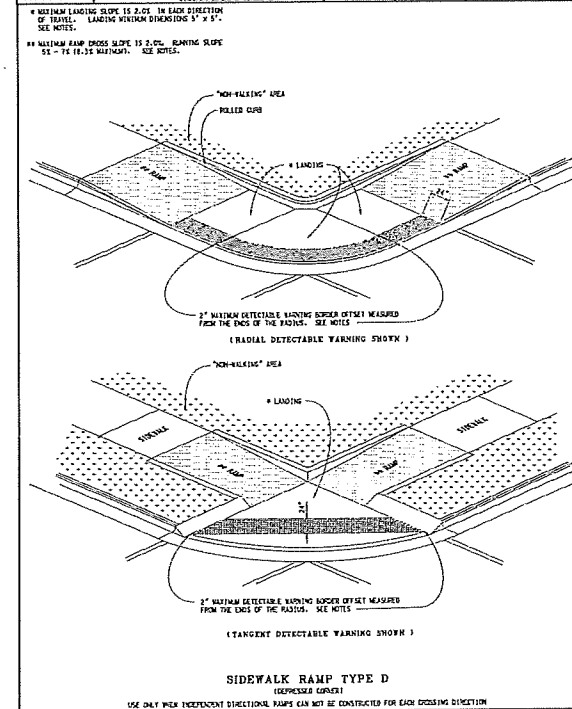


| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 1 OF 7 |

| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 2 OF 7 |

| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 3 OF 7 |

| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 4 OF 7 |



| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 5 OF 7 |

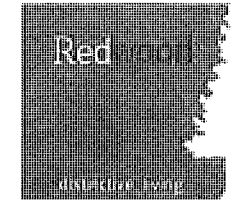
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|-----------------|---------------------------------|------------|---------------|
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| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 7 OF 7 |

| DESIGN DIVISION | DESIGNER                        | DATE       | SHEET         |
|-----------------|---------------------------------|------------|---------------|
| ROADS           | CONRAD, BUREAU OF ROAD SERVICES | 12-11-2017 | R-28-J 8 OF 7 |

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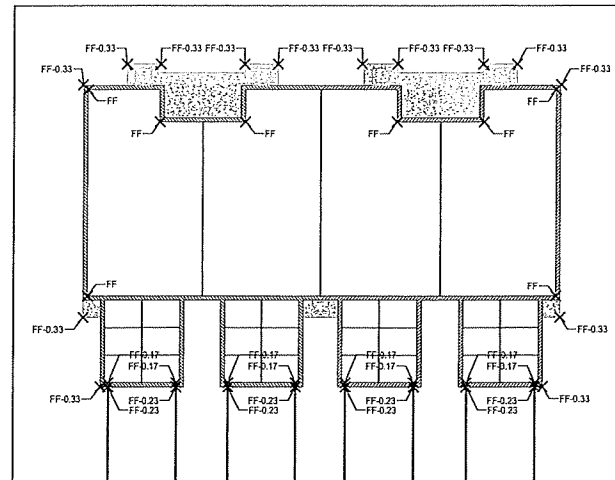
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| Project Manager:<br>P. FURTAW, PE | Checked By:<br>P. FURTAW, PE |
| Designer:<br>J. GRAHAM, PE        | Drawn By:<br>J. GRAHAM, PE   |
| Date Plotted:<br>NOVEMBER 9, 2018 | Plot Number:<br>12953.00     |

**DRIVEWAY GRADING DETAILS**

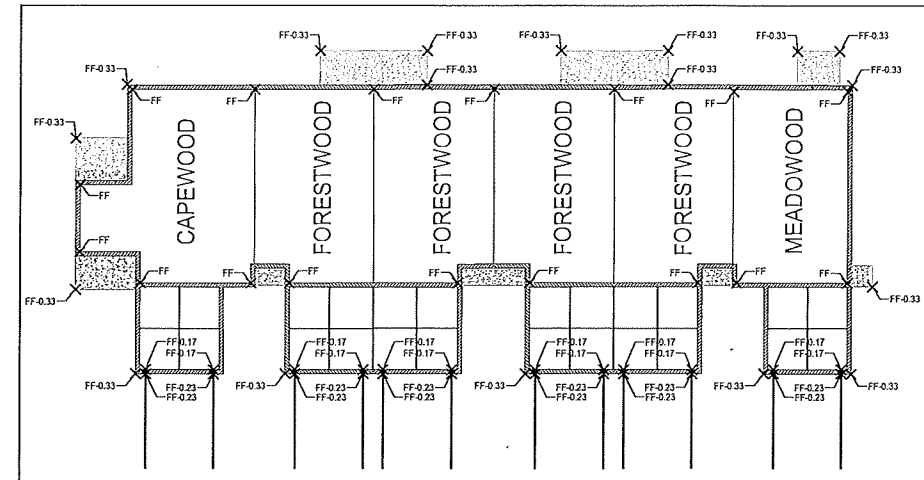
**C600**

CITY FILE #18-022 SECTION 13



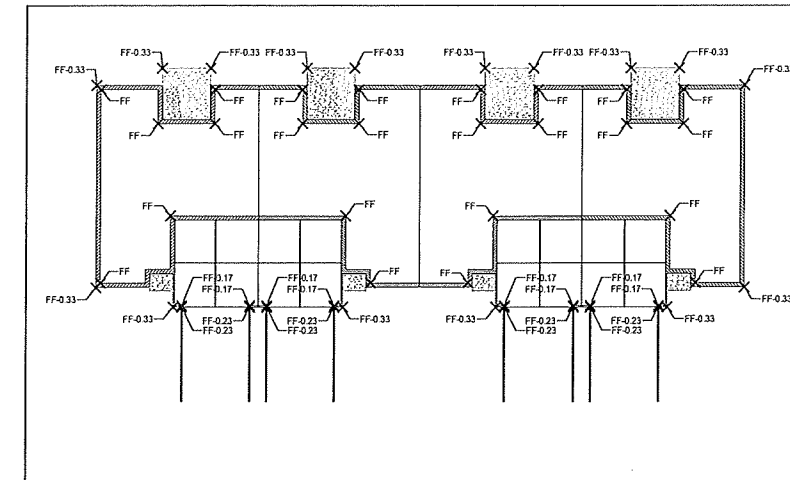
HAYDENWOOD TYPICAL GRADING DETAIL

SCALE: 1" = 20'



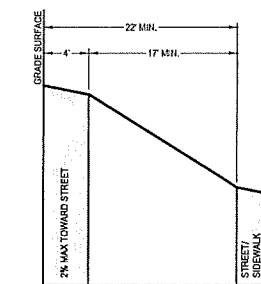
CAPEWOOD-FORESTWOOD-MEADOWWOOD TYPICAL GRADING DETAIL

SCALE: 1" = 20'



WILLOWOOD TYPICAL GRADING DETAIL

SCALE: 1" = 20'



SECTION A-A

TYPICAL BUILDING GRADING DETAIL

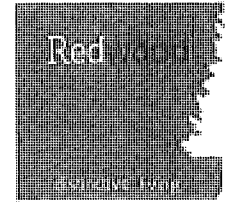
SCALE: 1" = 20'

**LEGEND**

ACCESSIBLE PATH 2% MAX SIDE SLOPE  
AND 5% MAX LONGITUDINAL SLOPE

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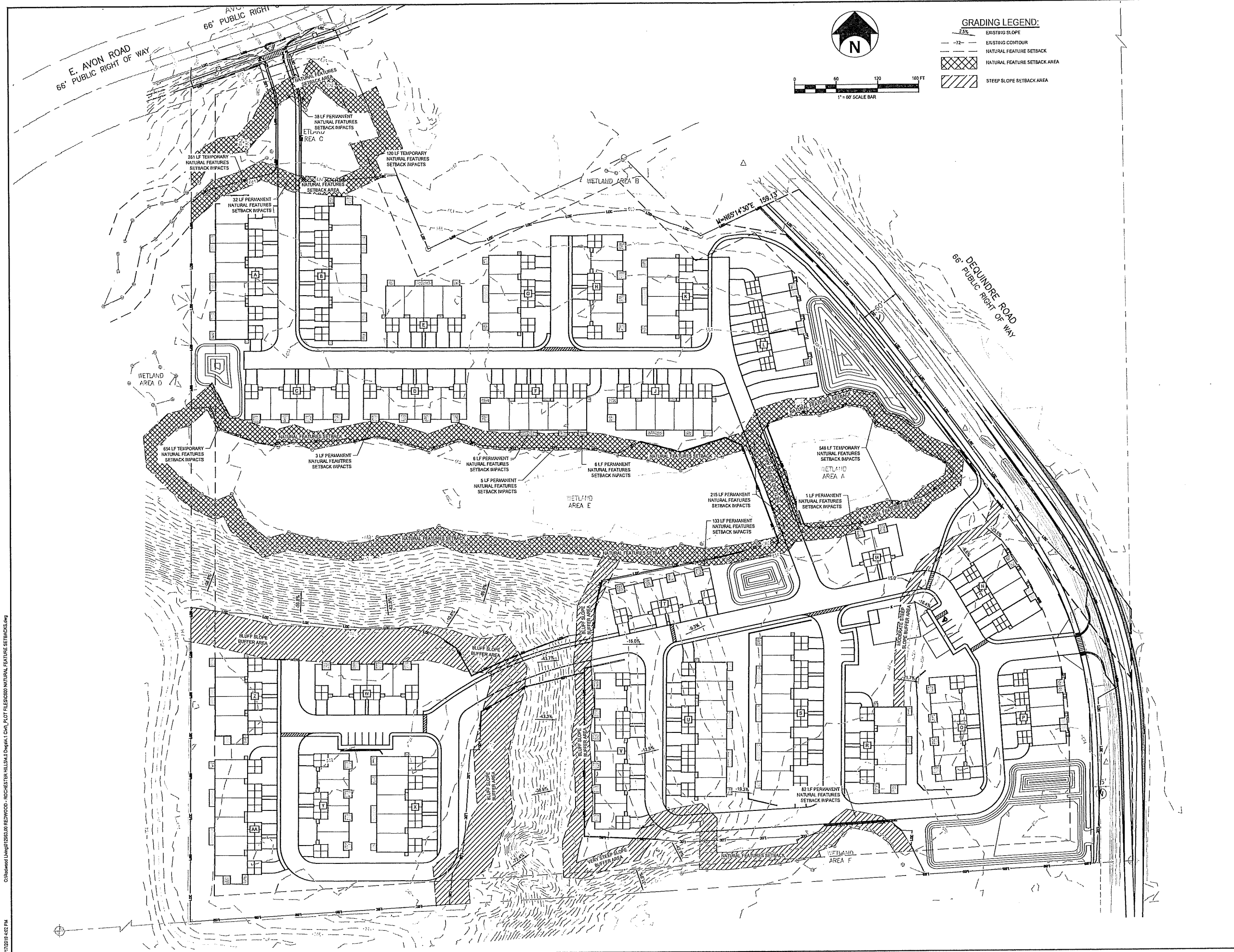
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|-----------------------------------|------------------------------|
| Prepared By:<br>P. FURTAJ, PE     | Checked By:<br>P. FURTAJ, PE |
| Designed By:<br>L. GRAHAM, PE     | Drawn By:<br>L. GRAHAM, PE   |
| Date Plotted:<br>NOVEMBER 9, 2018 | Project Number:<br>12963.00  |

## NATURAL FEATURE SETBACKS

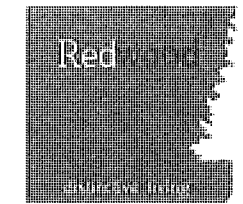
# C601

CITY FILE #18-022 SECTION 13



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| 09/27/2019 | STEP ONE PD0 REVIEW        |

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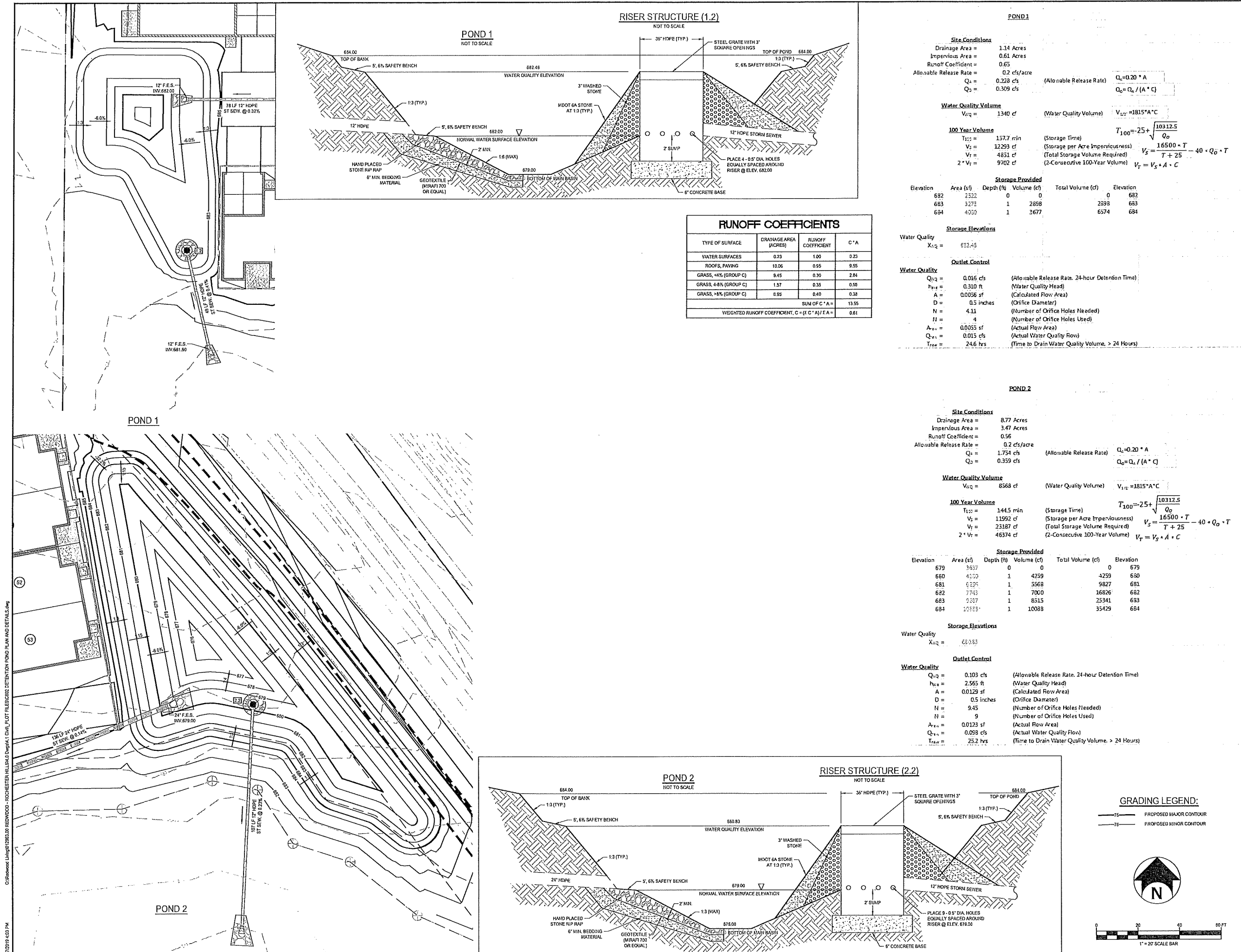
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| Prepared by:     | Checked by:     |
|------------------|-----------------|
| P. FURUTANI, PE  | P. FURUTANI, PE |
| Designed by:     | Drawn by:       |
| I. GRAHAM, PE    | I. GRAHAM, PE   |
| Date Issued:     | Page Number:    |
| NOVEMBER 9, 2018 | 12963.00        |

### DETENTION POND PLAN AND DETAILS

# C602

CITY FILE #18-022 SECTION 13



### RUNOFF COEFFICIENTS

| TYPE OF SURFACE                                     | DRAINAGE AREA (ACRES) | RUNOFF COEFFICIENT | C * A |
|---|-----------------------|--------------------|-------|
| WATER SURFACES                                      | 0.23                  | 1.00               | 0.23  |
| ROOFS, PAVING                                       | 10.06                 | 0.95               | 9.55  |
| GRASS, <4% (GROUP C)                                | 8.45                  | 0.30               | 2.54  |
| GRASS, 4-8% (GROUP C)                               | 1.57                  | 0.35               | 0.55  |
| GRASS, >8% (GROUP C)                                | 0.93                  | 0.40               | 0.38  |
| SUM OF C * A =                                      |                       |                    | 13.55 |
| WEIGHTED RUNOFF COEFFICIENT, C = (Σ C * A) / T.A. = |                       |                    | 0.61  |

### POND 1

**Site Conditions**  
 Drainage Area = 1.14 Acres  
 Impervious Area = 0.61 Acres  
 Runoff Coefficient = 0.65  
 Allowable Release Rate = 0.2 cfs/acre  
 $Q_2 = 0.228 \text{ cfs}$   
 $Q_3 = 0.309 \text{ cfs}$

**Water Quality Volume**  
 $V_{WQV} = 1340 \text{ cf}$

**100 Year Volume**  
 $T_{100} = 157.7 \text{ min}$   
 $V_3 = 12293 \text{ cf}$   
 $V_2 = 4851 \text{ cf}$   
 $2 * V_1 = 9702 \text{ cf}$

**Storage Provided**

| Elevation | Area (sq) | Depth (ft) | Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-----------|
| 682       | 2322      | 0          | 0           | 682       |
| 683       | 3272      | 1          | 2858        | 683       |
| 684       | 4050      | 1          | 3677        | 684       |

**Water Quality**  
 $X_{1.2} = 633.45$

**Outlet Control**

**Water Quality**  
 $Q_{1.2} = 0.016 \text{ cfs}$   
 $h_{1.2} = 0.310 \text{ ft}$   
 $A = 0.0056 \text{ sf}$   
 $D = 0.5 \text{ inches}$   
 $N = 4.11$   
 $N = 4$   
 $A_{1.2} = 0.0055 \text{ sf}$   
 $Q_{1.2} = 0.015 \text{ cfs}$   
 $T_{1.2} = 24.6 \text{ hrs}$

(Allowable Release Rate, 24-hour Detention Time)  
 (Water Quality Head)  
 (Calculated Flow Area)  
 (Orifice Diameter)  
 (Number of Orifice Holes Needed)  
 (Number of Orifice Holes Used)  
 (Actual Flow Area)  
 (Actual Water Quality Flow)  
 (Time to Drain Water Quality Volume, > 24 Hours)

**Equations:**  
 $Q_2 = 0.20 * A$   
 $Q_3 = Q_2 / (A * C)$   
 $V_{WQV} = 1815 * A * C$   
 $T_{100} = 25 + \sqrt{\frac{10312.5}{Q_0}}$   
 $V_3 = \frac{16500 * T}{T + 25} - 40 * Q_0 * T$   
 $V_2 = V_3 * A * C$

### POND 2

**Site Conditions**  
 Drainage Area = 8.77 Acres  
 Impervious Area = 3.47 Acres  
 Runoff Coefficient = 0.56  
 Allowable Release Rate = 0.2 cfs/acre  
 $Q_2 = 1.754 \text{ cfs}$   
 $Q_3 = 0.359 \text{ cfs}$

**Water Quality Volume**  
 $V_{WQV} = 6563 \text{ cf}$

**100 Year Volume**  
 $T_{100} = 144.5 \text{ min}$   
 $V_3 = 11592 \text{ cf}$   
 $V_2 = 23187 \text{ cf}$   
 $2 * V_1 = 46374 \text{ cf}$

**Storage Provided**

| Elevation | Area (sq) | Depth (ft) | Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-----------|
| 679       | 3637      | 0          | 0           | 679       |
| 680       | 4500      | 1          | 4259        | 680       |
| 681       | 6395      | 1          | 5968        | 681       |
| 682       | 7743      | 1          | 7000        | 682       |
| 683       | 9187      | 1          | 8515        | 683       |
| 684       | 10883     | 1          | 10088       | 684       |

**Water Quality**  
 $X_{1.2} = 660.65$

**Outlet Control**

**Water Quality**  
 $Q_{1.2} = 0.103 \text{ cfs}$   
 $h_{1.2} = 2.565 \text{ ft}$   
 $A = 0.0129 \text{ sf}$   
 $D = 0.5 \text{ inches}$   
 $N = 9.45$   
 $N = 9$   
 $A_{1.2} = 0.0123 \text{ sf}$   
 $Q_{1.2} = 0.098 \text{ cfs}$   
 $T_{1.2} = 25.2 \text{ hrs}$

(Allowable Release Rate, 24-hour Detention Time)  
 (Water Quality Head)  
 (Calculated Flow Area)  
 (Orifice Diameter)  
 (Number of Orifice Holes Needed)  
 (Number of Orifice Holes Used)  
 (Actual Flow Area)  
 (Actual Water Quality Flow)  
 (Time to Drain Water Quality Volume, > 24 Hours)

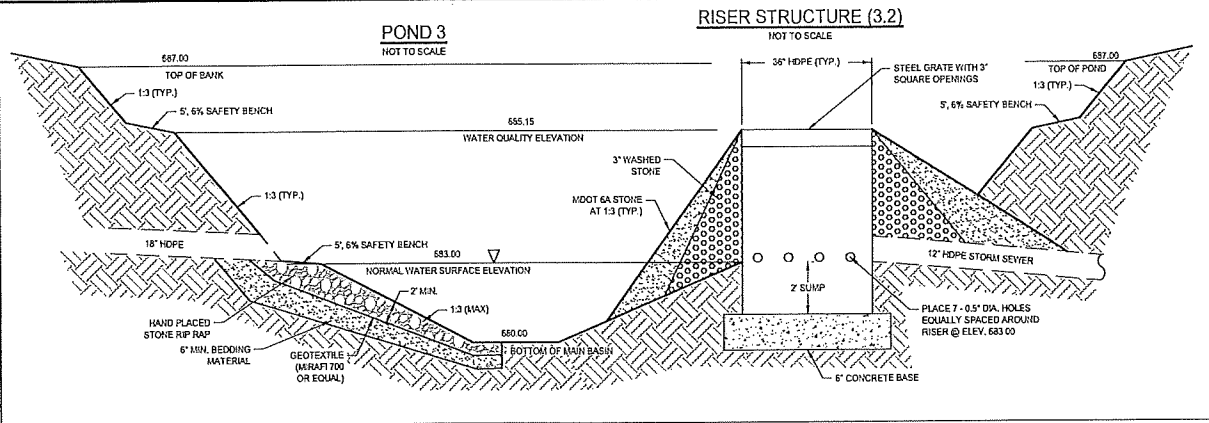
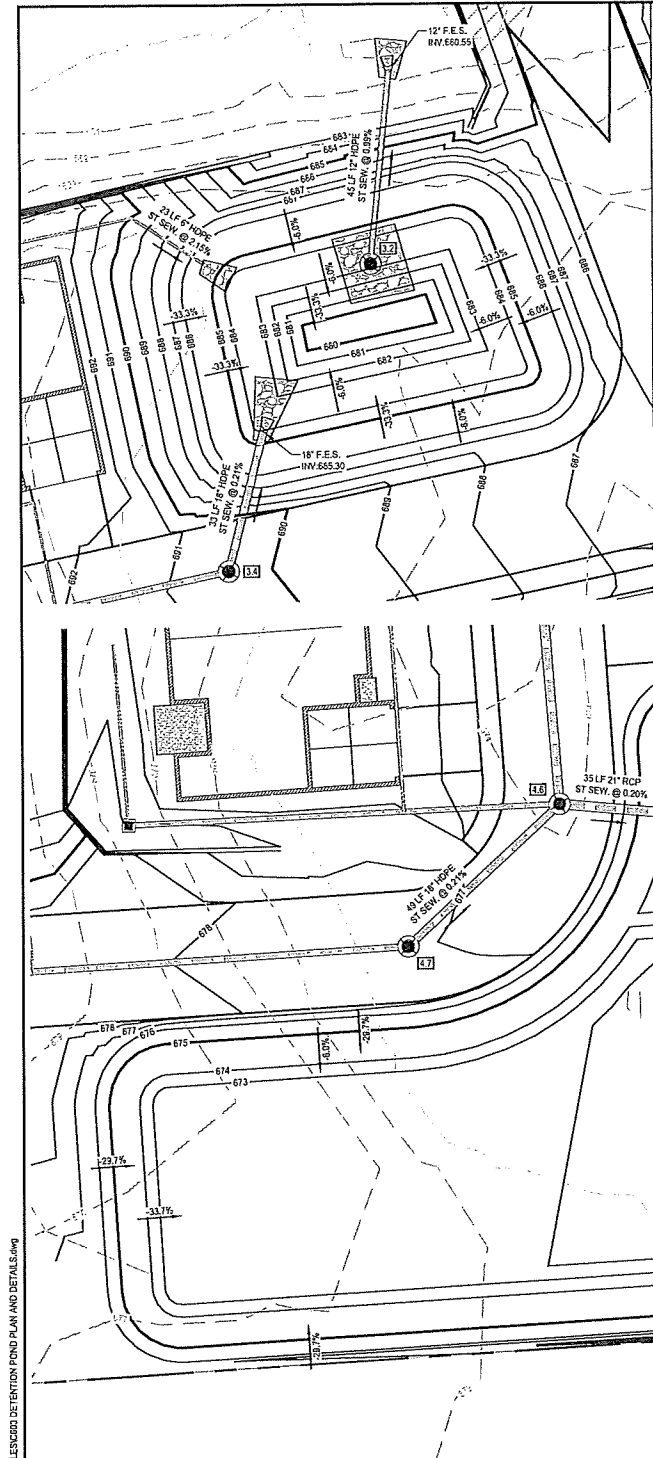
**Equations:**  
 $Q_2 = 0.20 * A$   
 $Q_3 = Q_2 / (A * C)$   
 $V_{WQV} = 1815 * A * C$   
 $T_{100} = 25 + \sqrt{\frac{10312.5}{Q_0}}$   
 $V_3 = \frac{16500 * T}{T + 25} - 40 * Q_0 * T$   
 $V_2 = V_3 * A * C$

### GRADING LEGEND:

— 75 — PROPOSED MAJOR CONTOUR  
 — 76 — PROPOSED MINOR CONTOUR

1" = 20' SCALE BAR

C:\blownd\limg\12803.00 REDWOOD - ROCHESTER HILLS.DWG, 2 Dwgpl1.dwg, PLOT FILES\002 DETENTION POND PLAN AND DETAILS.dwg  
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**POND 3**

**Site Conditions**  
 Drainage Area = 4.60 Acres  
 Impervious Area = 2.40 Acres  
 Runoff Coefficient = 0.64  
 Allowable Release Rate = 0.2 cfs/acre  
 $Q_{10} = 0.520 \text{ cfs}$   
 $Q_{25} = 0.313 \text{ cfs}$

**Water Quality Volume**  
 $V_{10} = 5336 \text{ cf}$   
 $V_{25} = 3185 \text{ cf}$

**100 Year Volume**  
 $T_{100} = 156.5 \text{ min}$   
 $V_{100} = 12269 \text{ cf}$   
 $V_{100} = 16825 \text{ cf}$   
 $2 \cdot V_{100} = 37649 \text{ cf}$

**Storage Provided**

| Elevation | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-------------------|-----------|
| 683       | 162E      | 0          | 0           | 0                 | 663       |
| 684       | 2525      | 1          | 2119        | 2119              | 664       |
| 685       | 2019      | 1          | 2709        | 4828              | 665       |
| 686       | 2566      | 1          | 3358        | 8185              | 666       |
| 687       | 4429      | 1          | 4063        | 12248             | 687       |

**Storage Elevations**  
 $X_{100} = 655.15$

**Outlet Control**

**Water Quality**  
 $Q_{10} = 0.062 \text{ cfs}$   
 $h_{10} = 1.442 \text{ ft}$   
 $A = 0.0103 \text{ sf}$   
 $D = 0.5 \text{ inches}$   
 $N = 7.58$   
 $N = 7$   
 $A_{10} = 0.0095 \text{ sf}$   
 $Q_{10} = 0.057 \text{ cfs}$   
 $T_{100} = 26.0 \text{ hrs}$

**Storage Elevations**  
 $X_{100} = 673.65$   
 $X_{100} = 673.59$   
 $X_{100} = 674.72$

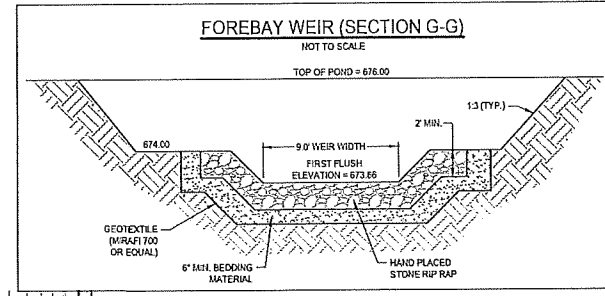
**Outlet Control**

**Water Quality**  
 $Q_{10} = 0.056 \text{ cfs}$   
 $h_{10} = 1.720 \text{ ft}$   
 $A = 0.0147 \text{ sf}$   
 $D = 1.5 \text{ inches}$   
 $N = 1.20$   
 $N = 1$   
 $A_{10} = 0.0123 \text{ sf}$   
 $Q_{10} = 0.081 \text{ cfs}$   
 $T_{100} = 28.8 \text{ hrs}$

**Bankfull Flood**  
 $Q = 0.219 \text{ cfs}$   
 $h_{100} = 1.73 \text{ ft}$   
 $A = 0.0355 \text{ sf}$   
 $D = 0.75 \text{ inches}$   
 $N = 10.92$   
 $N = 10$   
 $A_{100} = 0.0307 \text{ sf}$   
 $Q_{100} = 0.201 \text{ cfs}$   
 $T_{100} = 43.70 \text{ hrs}$

**100 Year Flood**  
 $Q_{100} = 1.552 \text{ cfs}$   
 $Z_{100} = 672.0 \text{ ft}$   
 $h_{100} = 2.72 \text{ ft}$   
 $A_{100} = 0.1891 \text{ sf}$   
 $D = 6 \text{ inches}$   
 $N = 0.95$   
 $N = 0$   
 $A_{100} = 0.0000 \text{ sf}$   
 $Q_{100} = 0.000 \text{ cfs}$

**Forebay Weir**  
 $h_s = 1.248 \text{ in/yr}$   
 $C = 0.600$   
 $A = 7.759$   
 $Q_{10} = 5.804 \text{ cfs}$   
 $C = 3.4$   
 Top of Weir = 674.00  
 $H = 0.343$   
 $B = 8.487 \text{ ft}$



**POND 4**

**Site Conditions**  
 Drainage Area = 7.76 Acres  
 Impervious Area = 3.58 Acres  
 Runoff Coefficient = 0.60  
 Allowable Release Rate = 0.2 cfs/acre  
 $Q_{10} = 1.552 \text{ cfs}$   
 $Q_{25} = 0.333 \text{ cfs}$

**Water Quality Volume**  
 $V_{10} = 6445 \text{ cf}$   
 $V_{25} = 31583 \text{ cf}$

**Bankfull Flood (1-Year) Volume**  
 $V_{100} = 31583 \text{ cf}$

**100 Year Volume**  
 $T_{100} = 350.8 \text{ min}$   
 $V_{100} = 12142 \text{ cf}$   
 $V_{100} = 56493 \text{ cf}$

**Storage Provided**

| Elevation | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-------------------|-----------|
| 671       | 2352      | 0          | 0           | 0                 | 671       |
| 672       | 2374      | 1          | 2529        | 2529              | 672       |
| 673       | 2655      | 1          | 3255        | 5784              | 673       |
| 674       | 4489      | 1          | 4053        | 9836              | 674       |

**Storage Provided**

| Elevation | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-------------------|-----------|
| 671       | 5200      | 0          | 0           | 0                 | 671       |
| 672       | 8137      | 1          | 6669        | 6669              | 672       |
| 673       | 10720     | 1          | 13434       | 20102             | 673       |
| 674       | 20713     | 1          | 19722       | 39824             | 674       |
| 675       | 25520     | 1          | 23137       | 62960             | 675       |
| 676       | 27720     | 1          | 26645       | 89605             | 676       |

**Forebay Storage Provided**

| Elevation | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
|-----------|-----------|------------|-------------|-------------------|-----------|
| 671       | 2352      | 0          | 0           | 0                 | 671       |
| 672       | 2374      | 1          | 2529        | 2529              | 672       |
| 673       | 2655      | 1          | 3255        | 5784              | 673       |
| 674       | 4489      | 1          | 4053        | 9836              | 674       |

**Outlet Control**

**Water Quality**  
 $Q_{10} = 0.062 \text{ cfs}$   
 $h_{10} = 1.442 \text{ ft}$   
 $A = 0.0103 \text{ sf}$   
 $D = 0.5 \text{ inches}$   
 $N = 7.58$   
 $N = 7$   
 $A_{10} = 0.0095 \text{ sf}$   
 $Q_{10} = 0.057 \text{ cfs}$   
 $T_{100} = 26.0 \text{ hrs}$

**Storage Elevations**  
 $X_{100} = 673.65$   
 $X_{100} = 673.59$   
 $X_{100} = 674.72$

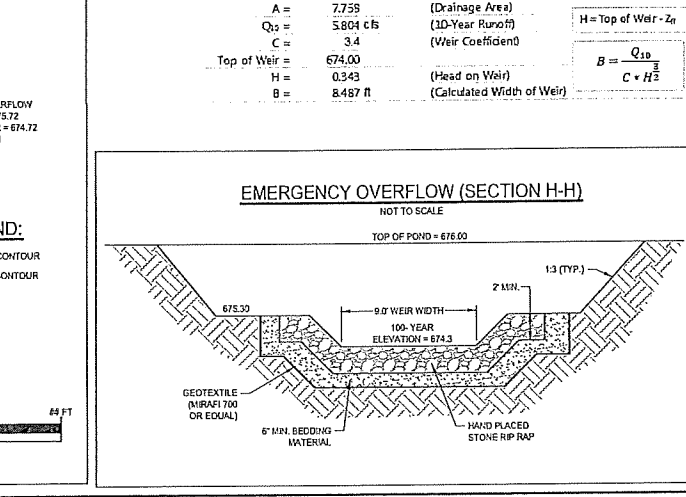
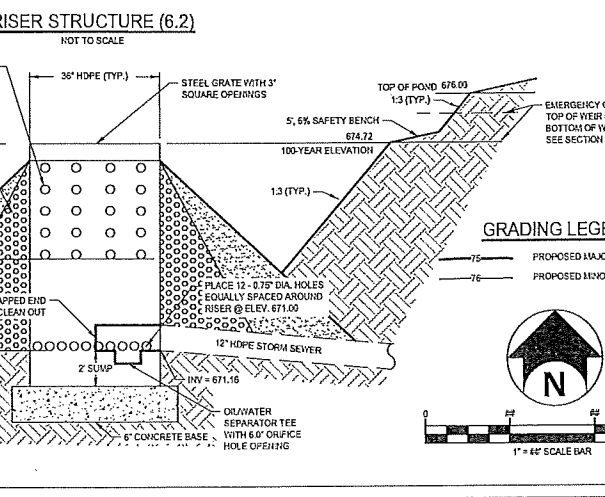
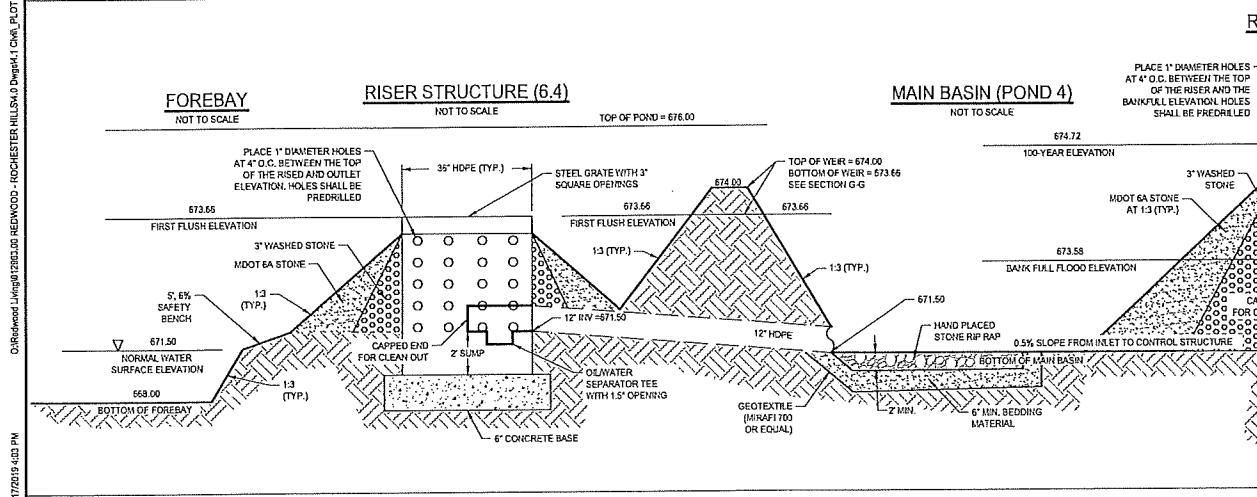
**Outlet Control**

**Water Quality**  
 $Q_{10} = 0.056 \text{ cfs}$   
 $h_{10} = 1.720 \text{ ft}$   
 $A = 0.0147 \text{ sf}$   
 $D = 1.5 \text{ inches}$   
 $N = 1.20$   
 $N = 1$   
 $A_{10} = 0.0123 \text{ sf}$   
 $Q_{10} = 0.081 \text{ cfs}$   
 $T_{100} = 28.8 \text{ hrs}$

**Bankfull Flood**  
 $Q = 0.219 \text{ cfs}$   
 $h_{100} = 1.73 \text{ ft}$   
 $A = 0.0355 \text{ sf}$   
 $D = 0.75 \text{ inches}$   
 $N = 10.92$   
 $N = 10$   
 $A_{100} = 0.0307 \text{ sf}$   
 $Q_{100} = 0.201 \text{ cfs}$   
 $T_{100} = 43.70 \text{ hrs}$

**100 Year Flood**  
 $Q_{100} = 1.552 \text{ cfs}$   
 $Z_{100} = 672.0 \text{ ft}$   
 $h_{100} = 2.72 \text{ ft}$   
 $A_{100} = 0.1891 \text{ sf}$   
 $D = 6 \text{ inches}$   
 $N = 0.95$   
 $N = 0$   
 $A_{100} = 0.0000 \text{ sf}$   
 $Q_{100} = 0.000 \text{ cfs}$

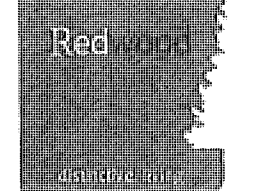
**Forebay Weir**  
 $h_s = 1.248 \text{ in/yr}$   
 $C = 0.600$   
 $A = 7.759$   
 $Q_{10} = 5.804 \text{ cfs}$   
 $C = 3.4$   
 Top of Weir = 674.00  
 $H = 0.343$   
 $B = 8.487 \text{ ft}$



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 P. FURTAW, PE  
 L. GRAHAM, PE  
 November 9, 2018  
 12963.00  
 DETENTION POND PLAN AND DETAILS  
**C603**  
 CITY FILE #18-022 SECTION 13

**REDWOOD ROCHESTER HILLS**

E. AVON ROAD  
 ROCHESTER HILLS, MI 48307  
 OAKLAND COUNTY



7510 E. PLEASANT VALLEY RD  
 INDEPENDENCE, OH 44131

**B BERGMANN**  
 ARCHITECTS ENGINEERS PLANNERS

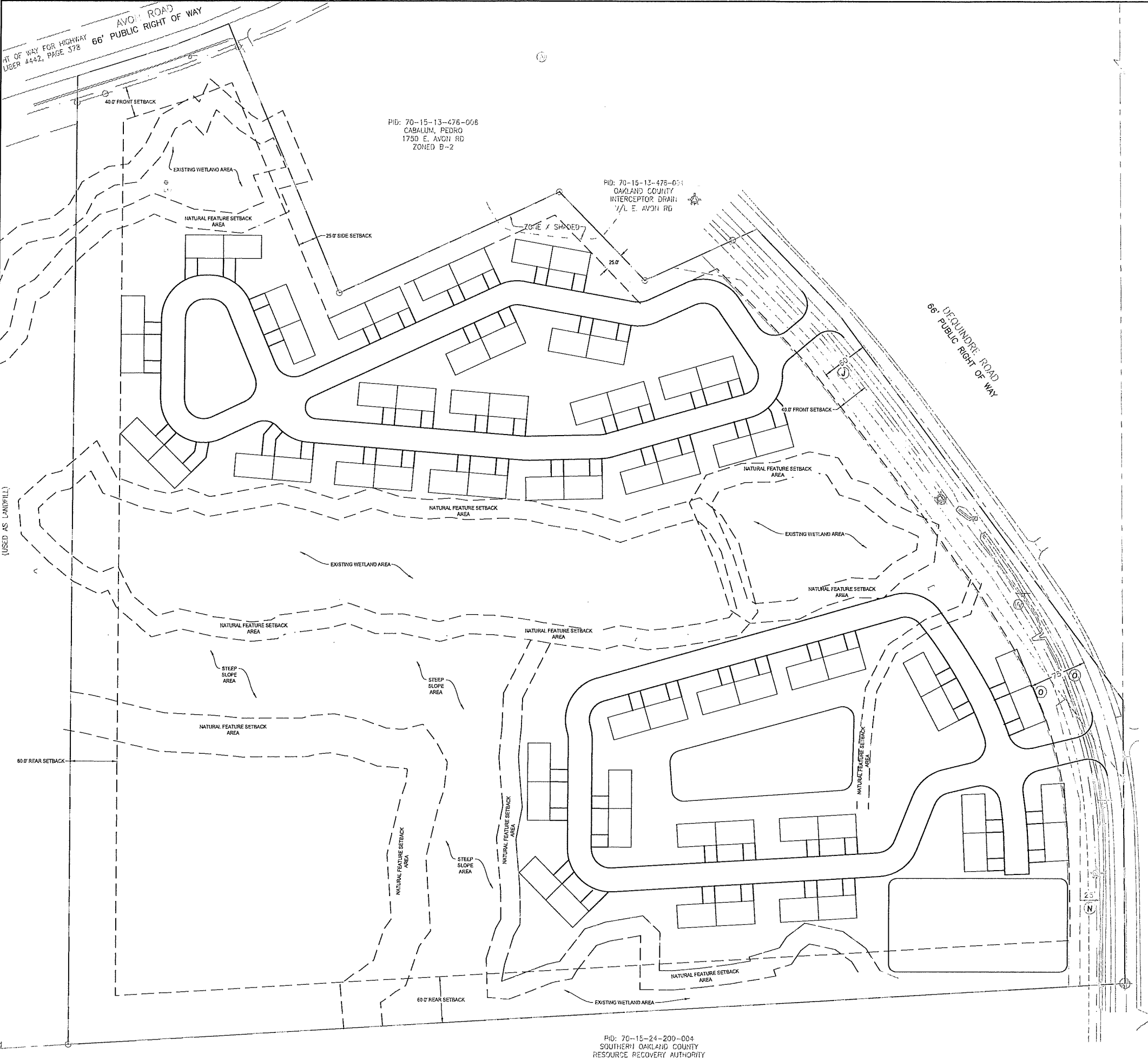
Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.  
 7050 West Saginaw Hwy.  
 Suite 200  
 Lansing, MI 48917  
 office: 517.272.9835  
 fax: 517.272.9836  
 www.bergmannpc.com

| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 1/16/2018  | PUD REVIEW                 |
| 02/04/2018 | REV. PER CITY COMMENTS     |
| 03/12/2018 | 2ND REV. PER CITY COMMENTS |
| 06/02/2018 | 3RD REV. PER CITY COMMENTS |
| 08/22/2018 | 4TH REV. PER CITY COMMENTS |
| 09/27/2018 | STEP ONE PUD REVIEW        |

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 HT OF WAY FOR HIGHWAY UGER 4442, PAGE 378  
 (USED AS LANDFILL)  
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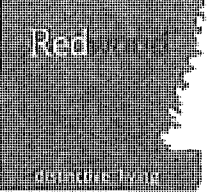


**SITE DATA:**  
 PARCEL ID: 70-15-13-476-005  
 LAND USE: ATTACHED UNIT  
 ZONING: SITE - R3 - ONE FAMILY RESIDENTIAL DISTRICT (MR OVERLAY)  
 NORTH - R1 - ONE FAMILY RESIDENTIAL DISTRICT (PUD OVERLAY)  
 EAST - SHELBY TOWNSHIP  
 WEST - R3 - ONE FAMILY RESIDENTIAL DISTRICT  
 SOUTH - R3 - ONE FAMILY RESIDENTIAL DISTRICT  
 UNIT BREAKDOWN: 82 TOTAL UNITS = 2.73 UNITS PER ACRE  
 LOT AREA: 29.95 ACRES  
 SETBACKS: FRONT - 35 FEET  
 SIDE - 25 FEET  
 REAR - 60 FEET

**SITE LEGEND:**  
 - - - - - PROPERTY SETBACK LINE  
 - - - - - PROPERTY LINE

# REDWOOD ROCHESTER HILLS

E. AVON ROAD  
 ROCHESTER HILLS, MI 48307  
 OAKLAND COUNTY



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 7050 West Saginaw Hwy.  
 Suite 200  
 Lansing, MI 48917  
 office: 517.272.9835  
 fax: 517.272.9836  
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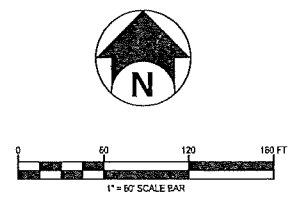
| DATE       | DESCRIPTION                |
|------------|----------------------------|
| 11/15/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 06/02/2019 | 3RD REV. PER CITY COMMENTS |
| 08/22/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE PUD REVIEW        |

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|                               |                              |
|-------------------------------|------------------------------|
| Prepared By:<br>F. FURTAY, PE | Checked By:<br>P. FURTAY, PE |
| Designed By:<br>I. GRAHAM, PE | Drawn By:<br>I. GRAHAM, PE   |
| Date:<br>NOVEMBER 9, 2018     | Project Number:<br>12063.00  |

**EXISTING ZONING EXHIBIT**

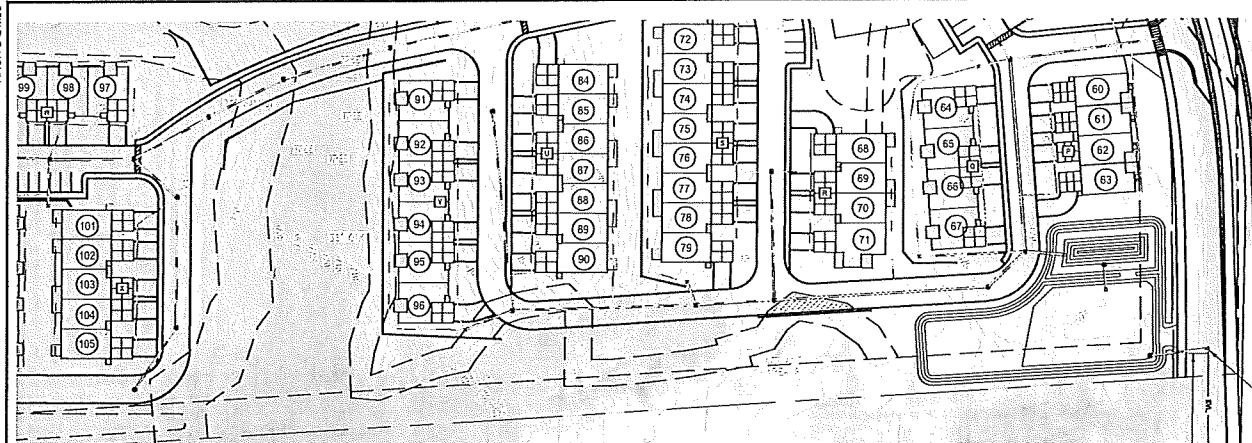


## C604





ARCH D 24926



PROPOSED STORM SEWER OUTFALL  
ELEVATION: 671.66

EXISTING ROADWAY DRAINAGE DITCH

EXISTING DRAINAGE CULVERT UNDERNEATH DEQUINORIE  
ELEVATION: 667.95



**GRADING LEGEND:**

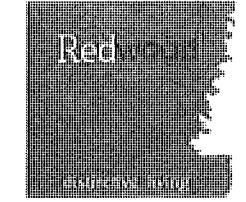
--- -72--- EXISTING CONTOUR

**UTILITY LEGEND:**

- STORM SEWER
- YARD BASIN
- CATCH BASIN
- STORM MANHOLE

# REDWOOD ROCHESTER HILLS

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Suite 200  
Lansing, MI 48917

office: 517.272.9835  
fax: 517.272.9836

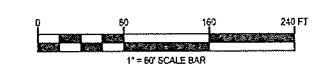
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|------------|----------------------------|
| 11/15/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
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| 05/02/2019 | 3RD REV. PER CITY COMMENTS |
| 08/22/2019 | 4TH REV. PER CITY COMMENTS |
| 08/27/2019 | STEP ONE PUD REVIEW        |

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|                                   |                              |
|-----------------------------------|------------------------------|
| Project Manager:<br>P. FURTAW, PE | Checked By:<br>P. FURTAW, PE |
| Designed By:<br>L. GRAHAM, PE     | Drawn By:<br>L. GRAHAM, PE   |
| Date Issued:<br>NOVEMBER 9, 2018  | Project Number:<br>12963.00  |



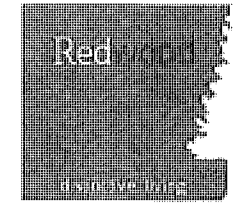
## STORMWATER OUTFALL PLAN

# C606

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# REDWOOD ROCHESTER HILLS

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ROCHESTER HILLS, MI 48307  
OAKLAND COUNTY



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|------------|----------------------------|
| 11/16/2018 | PUD REVIEW                 |
| 02/04/2019 | REV. PER CITY COMMENTS     |
| 03/21/2019 | 2ND REV. PER CITY COMMENTS |
| 04/02/2019 | 3RD REV. PER CITY COMMENTS |
| 05/22/2019 | 4TH REV. PER CITY COMMENTS |
| 06/27/2019 | STEP ONE PUD REVIEW        |

### GRADING LEGEND:

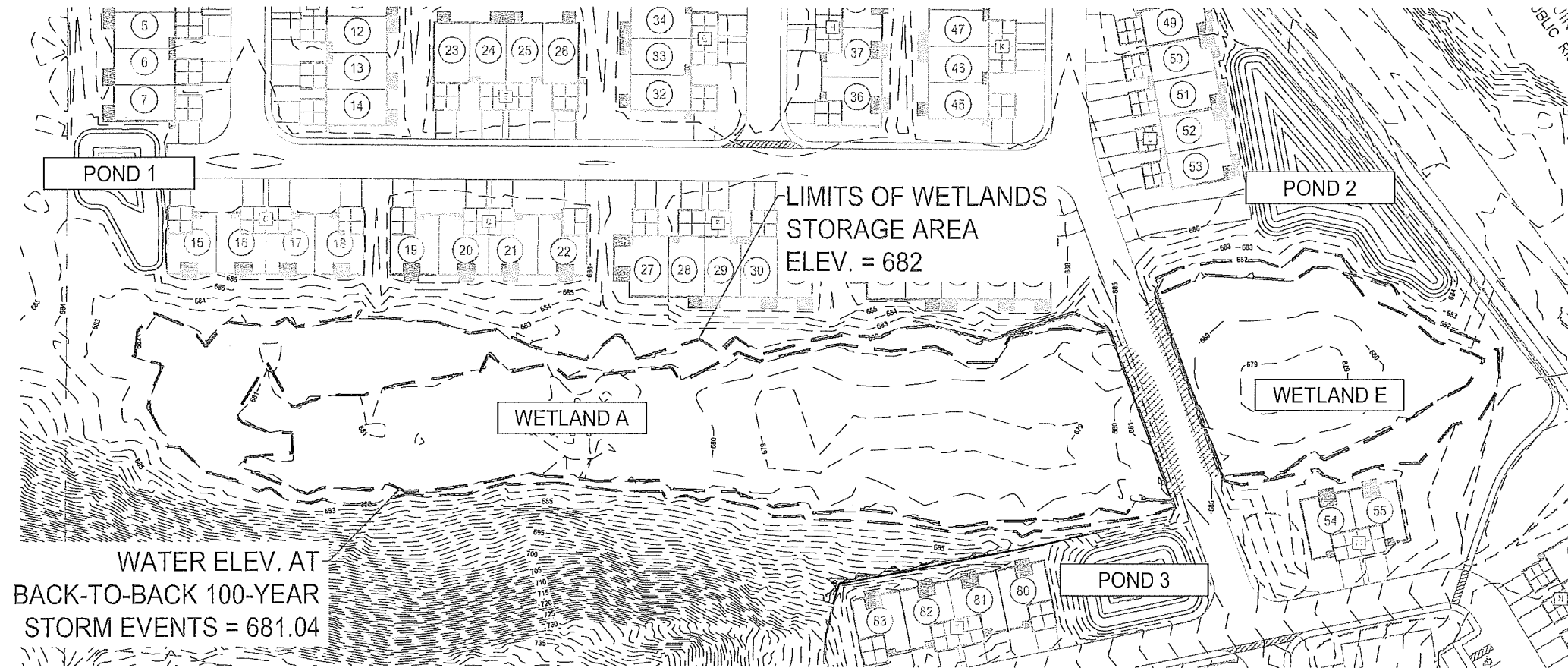
- 75— PROPOSED MAJOR CONTOUR
- 76— PROPOSED MINOR CONTOUR
- TC+78.01  
BC-77.51 PROPOSED TOP OF CURB / BOTTOM OF CURB ELEVATION
- X1YB/W+152.50 PROPOSED TOP OF WALL / BOTTOM OF WALL
- X 77.73 PROPOSED SPOT ELEVATION
- X EG-77.73 EXISTING ELEVATION
- X HP-77.73 PROPOSED HIGH POINT ELEVATION
- X TG-77.73 PROPOSED TOP OF GRATE ELEVATION
- X FF-77.73 FINISHED FLOOR ELEVATION
- 2.5% PROPOSED SLOPE
- 72- EXISTING CONTOUR
- RIDGE LINE

| TOTAL VOLUME REQUIRED                    |            |
|--|------------|
| 2-100 YEAR EVENT, POND 1 VOLUME REQUIRED | 9,702 CF   |
| 2-100 YEAR EVENT, POND 2 VOLUME REQUIRED | 46,374 CF  |
| 2-100 YEAR EVENT, POND 3 VOLUME REQUIRED | 37,649 CF  |
| TOTAL 2-100 YEAR EVENT VOLUME REQUIRED = | 93,725 CF  |
| WETLAND A VOLUME PROVIDED =              | 152,227 CF |
| WETLAND E VOLUME PROVIDED =              | 19,667 CF  |
| TOTAL WETLAND VOLUME PROVIDED =          | 171,894 CF |

| Wetland A Storage Provided |           |            |             |                   |           |
|----------------------------|-----------|------------|-------------|-------------------|-----------|
| Elevation                  | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
| 679                        | 2770      | 0          | 0           | 0                 | 679       |
| 680                        | 22127     | 1          | 19102       | 19102             | 680       |
| 681                        | 7339      | 1          | 50596       | 69999             | 681       |
| 682                        | 91003     | 1          | 82226       | 152227            | 682       |

| Wetland E Storage Provided |           |            |             |                   |           |
|----------------------------|-----------|------------|-------------|-------------------|-----------|
| Elevation                  | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
| 679                        | 2635      | 0          | 0           | 0                 | 679       |
| 680                        | 11957     | 1          | 7301        | 7301              | 680       |
| 681                        | 12755     | 1          | 12366       | 19667             | 681       |

| Wetland A-E (Total Volume Provided) |           |            |             |                   |           |
|-------------------------------------|-----------|------------|-------------|-------------------|-----------|
| Elevation                           | Area (sf) | Depth (ft) | Volume (cf) | Total Volume (cf) | Elevation |
| 679                                 | 12411     | 0          | 0           | 0                 | 679       |
| 680                                 | 40564     | 1          | 26403       | 26403             | 680       |
| 681                                 | 15193     | 1          | 63264       | 89666             | 681       |
| 682                                 | 91053     | 1          | 85611       | 178277            | 682       |



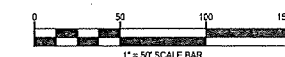
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|                  |                  |                 |               |
|------------------|------------------|-----------------|---------------|
| Project Manager: | P. FURTAW, PE    | Checked By:     | P. FURTAW, PE |
| Designer:        | L. GRAHAM, PE    | Drawn By:       | L. GRAHAM, PE |
| Date:            | NOVEMBER 9, 2018 | Project Number: | 12963.00      |



## WETLAND STORAGE PLAN

# C607

# REDWOOD ROCHESTER HILLS TOWNHOUSES

E. AVON ROAD  
ROCHESTER HILLS, MI  
PROJECT NO.: 6919

AUGUST 27, 2019

**OWNER/DEVELOPER**

REDWOOD LIVING  
7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OHIO 44131  
kmcivor@byRedwood.com  
CONTACT: KELLIE McIVOR P.: 216.360.9441

**ARCHITECT**

MANN PARSONS GRAY ARCHITECTS  
3660 EMBASSY PARKWAY  
FAIRLAWN, OHIO 44333  
james@mpg-architects.com  
CONTACT: JAMES KEYS P. 330.666.5770

**CONTRACTOR/CONSTRUCTION MANAGER**

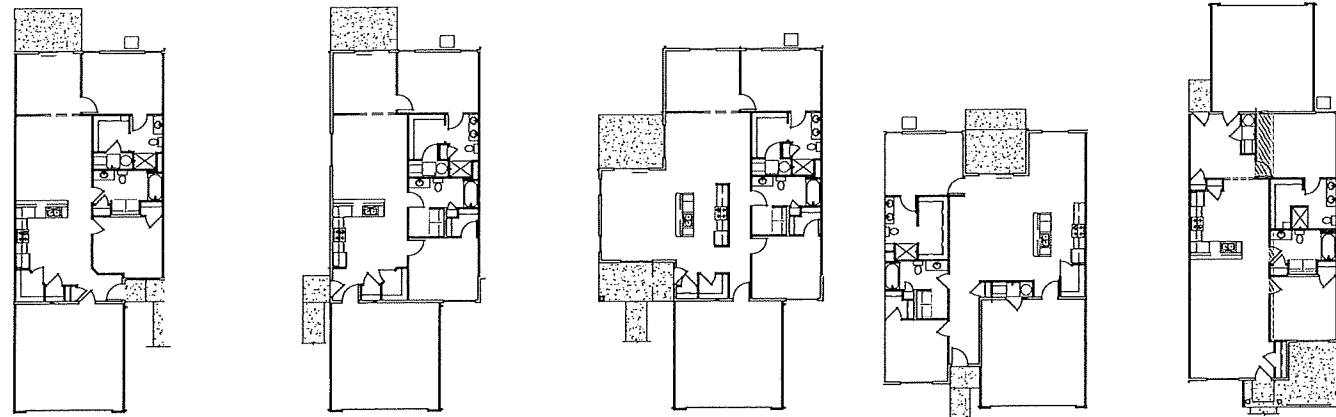
TO BE DETERMINED

**CIVIL CONSULTANT**

BERGMANN ASSOCIATES  
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LANSING, MICHIGAN 48917  
www.bergmannpc.com  
CONTACT: PAUL FURTAW P.: 517.272.9835

**PRELIMINARY**

NOTE!!!  
THIS DRAWING IS NOT  
FOR CONSTRUCTION



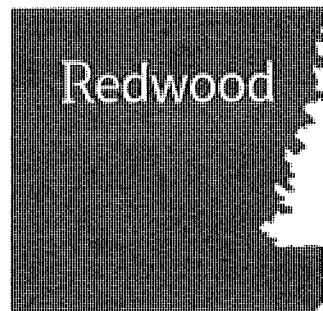
**FORESTWOOD**  
SCALE: 1/16" = 1'-0"

**MEADOWOOD**  
SCALE: 1/16" = 1'-0"

**CAPEWOOD**  
SCALE: 1/16" = 1'-0"

**WILLOWOOD**  
SCALE: 1/16" = 1'-0"

**HAYDENWOOD**  
SCALE: 1/16" = 1'-0"



**PLANS EXAMINER NOTES**

THE FOLLOWING PLANS ARE TO BE REVIEWED UNDER THE MICHIGAN RESIDENTIAL CODE PER SECTION 101.2 (EXCEPTION) OF THE 2015 MICHIGAN BUILDING CODE.

ALL UNITS ARE TOWNHOUSES AS DEFINED PER MRC SECTION R202



**NOTE!:**

ALL MATERIALS AND/OR PRODUCTS SELECTED FOR THIS PROJECT MUST BE INSTALLED PER THE MANUFACTURER'S SPECIFICATIONS, DETAILS, AND REFERENCES. THESE REQUIREMENTS TAKE PRECEDENCE OVER THE DRAWINGS AND THE MATERIALS NOTED.

**MATERIAL NOTE:**

- ALL MATERIALS MUST BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

**BIDDING PRECAUTIONS**

- PRIOR TO SUBMITTING PROPOSALS, BIDDERS SHALL EXAMINE DRAWINGS AND SPECIFICATIONS AND CONDUCT A PERSONAL EXAMINATION OF THE SITE AND BECOME AWARE OF ALL EXISTING CONDITIONS AND LIMITATIONS AFFECTING THE WORK AND THEIR PROPOSAL.

**GENERAL NOTES**

- TO BE CONSTRUCTED UNDER LOCAL BUILDING INSPECTION DEPT. MATERIALS AND CONSTRUCTION FOR SEWERAGE AND HIGHWAY IMPROVEMENTS TO MEET LOCAL CODES. BUILDING MATERIALS AND CONSTRUCTION TO MEET LOCAL CODES AND THE INTERNATIONAL BUILDING CODE. ALL PROPER PERMITS MUST BE OBTAINED FOR ALL CONSTRUCTION WORK (WHICH HAS BEEN APPROVED BY PROPER DEPARTMENTS) PRIOR TO ANY CONSTRUCTION. ALL CONTRACTORS, INCLUDING GENERAL, HVAC, ELECTRICAL, PLUMBING AND FIRE SUPPRESSION MUST BE LICENSED TO DO WORK WITHIN THE GOVERNING MUNICIPALITY.
- CONTRACTOR TO VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, GRADES, ETC. PRIOR TO ANY CONSTRUCTION AND SHALL REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT FOR CLARIFICATION OR RESOLUTION.
- ALL DIMENSIONS ARE CLEAR DISTANCE FROM FACE OF STUD TO FACE OF STUD AND/OR MASONRY WALL(S), UNLESS NOTED OTHERWISE.
- PROVIDE BEHIND WALL REINFORCING AND BLOCKING AS REQUIRED FOR ATTACHMENT OF MILLWORK, CASEWORK, TOILET ACCESS, ETC.
- THESE DESIGNS AND ALL ITEMS DEPICTED HEREIN, WHETHER IN WRITING OR GRAPHICALLY, AS INSTRUMENTS OF PROFESSIONAL SERVICE, MAY NOT BE ALTERED OR CHANGED, IN ANY WAY, WITHOUT THE PRIOR KNOWLEDGE AND WRITTEN CONSENT OF THE ARCHITECT. ANY CHANGE MADE WITHOUT THE ARCHITECT'S WRITTEN APPROVAL WILL VOID ALL SUCH DOCUMENTS AND INSTRUMENTS AND THE ARCHITECT WILL NOT BE PERSONALLY LIABLE FOR ANY DAMAGE, HARM OR LOSS CAUSED THEREBY.
- THE VARIOUS DRAWINGS COMPRISING THIS SET OF DRAWINGS ARE INTERDEPENDENT AND MUST BE USED JOINTLY TO EXECUTE THE WORK.
- ALL STUD WALLS NOT BUILT TO DECK ABOVE SHALL BE BRACED AS REQUIRED FOR LATERAL SUPPORT.
- A FIRE SUPPRESSION SYSTEM IS REQUIRED WITHIN THE CODE DATA OF THIS PROJECT. THE FIRE SUPPRESSION CONTRACTOR SHALL DESIGN AND INSTALL A COMPLETE FIRE SUPPRESSION SYSTEM - IN CONJUNCTION WITH THE FIRE HAZARD AND OCCUPANCY CLASSIFICATIONS OF THE STRUCTURE - PER MICHIGAN RESIDENTIAL CODE SECTION P2904 AND THE RELEVANT SECTIONS OF NFPA 13D. THE SUPPRESSION CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF THE SYSTEM DESIGNED BY AN MICHIGAN CERTIFIED SUPPRESSION DESIGNER TO THE AUTHORITY HAVING JURISDICTION FOR APPROVAL - AND THE ARCHITECT FOR THEIR RECORDS - PRIOR TO PLACING AN ORDER OR INSTALLING ANY COMPONENTS. THIS SUBMISSION SHALL BE NO LATER THAN THE INITIAL FRAMING STAGE.

| UNIT TYPE FLOOR AREA |                |              |
|----------------------|----------------|--------------|
| UNIT TYPE:           | LIVING AREA:   | TOTAL AREA:  |
| FORESTWOOD           | - 1,294 SQ.FT. | 1,714 SQ.FT. |
| MEADOWOOD            | - 1,326 SQ.FT. | 1,747 SQ.FT. |
| CAPEWOOD             | - 1,620 SQ.FT. | 2,040 SQ.FT. |
| HAYDENWOOD           | - 1,346 SQ.FT. | 1,744 SQ.FT. |
| WILLOWOOD            | - 1,381 SQ.FT. | 1,784 SQ.FT. |

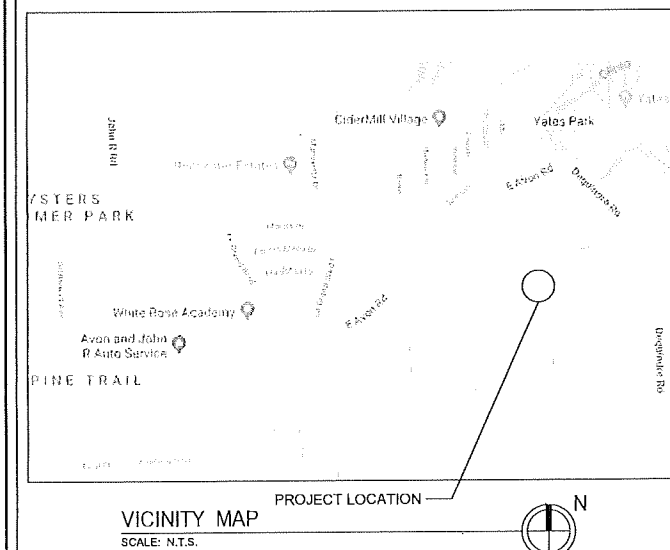
| CODE DATA          |  |
|--------------------|--|
| APPLICABLE CODES:  | M.B.C (MICHIGAN BUILDING CODE) 2015<br>M.R.C (MICHIGAN RESIDENTIAL CODE) 2015<br>ICC A117.1-2009<br>CITY OF ROCHESTER HILLS ZONING ORDINANCE |
| USE GROUP:         | R-3  |
| CONSTRUCTION TYPE: | 5B   |
| SMOKE DETECTORS:   | INSTALLED INSIDE AND OUTSIDE BEDROOMS  |
| ACCESSIBLE UNITS:  | ALL UNITS ARE TYPE 'B' UNITS<br>PER MBC SECTION 1107.6.3   |
| ACCESSIBLE ROUTE:  | SEE CIVIL DRAWINGS FOR ROUTE INFO AND CURB RAMP LOCATIONS (IF REQUIRED)  |

**FIRE SUPPRESSION NOTE**  
A 13D SPRINKLER SYSTEM IS TO BE INSTALLED IN EACH UNIT TO MEET REQUIREMENTS OF NFPA 13D OR MRC P2904.1

| BUILDING INFORMATION |                    |                  |
|----------------------|--------------------|------------------|
| BUILDING IDENTIFIER  | BUILDING ADDRESS:  | BUILDING SQ.FT.: |
| A                    | - TO BE DETERMINED | 12,389 SQ.FT.    |
| B                    | - TO BE DETERMINED | 12,389 SQ.FT.    |
| C                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| D                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| E                    | - TO BE DETERMINED | 6,924 SQ.FT.     |
| F                    | - TO BE DETERMINED | 8,930 SQ.FT.     |
| G                    | - TO BE DETERMINED | 6,924 SQ.FT.     |
| H                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| J                    | - TO BE DETERMINED | 8,930 SQ.FT.     |
| K                    | - TO BE DETERMINED | 6,924 SQ.FT.     |
| L                    | - TO BE DETERMINED | 10,464 SQ.FT.    |
| M                    | - TO BE DETERMINED | 5,353 SQ.FT.     |
| N                    | - TO BE DETERMINED | 6,975 SQ.FT.     |
| P                    | - TO BE DETERMINED | 6,975 SQ.FT.     |
| Q                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| R                    | - TO BE DETERMINED | 7,216 SQ.FT.     |
| S                    | - TO BE DETERMINED | 13,780 SQ.FT.    |
| T                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| U                    | - TO BE DETERMINED | 12,066 SQ.FT.    |
| V                    | - TO BE DETERMINED | 10,706 SQ.FT.    |
| W                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| X                    | - TO BE DETERMINED | 8,637 SQ.FT.     |
| Y                    | - TO BE DETERMINED | 7,138 SQ.FT.     |
| Z                    | - TO BE DETERMINED | 7,216 SQ.FT.     |
| AA                   | - TO BE DETERMINED | 10,643 SQ.FT.    |

**DRAWING INDEX**

- G1.0 - TITLE SHEET
- A4.1 - BUILDING PLAN AND ELEVATIONS
- A4.2 - BUILDING PLAN AND ELEVATIONS
- A4.3 - BUILDING PLAN AND ELEVATIONS
- A4.4 - BUILDING PLAN AND ELEVATIONS
- A4.5 - BUILDING PLAN AND ELEVATIONS
- A4.6 - BUILDING PLAN AND ELEVATIONS
- A4.7 - BUILDING PLAN AND ELEVATIONS
- A4.8 - BUILDING PLAN AND ELEVATIONS
- A4.9 - BUILDING PLAN AND ELEVATIONS
- A4.10 - BUILDING PLAN AND ELEVATIONS
- A4.11 - BUILDING PLAN AND ELEVATIONS
- A4.12 - BUILDING PLAN AND ELEVATIONS
- A4.13 - BUILDING PLAN AND ELEVATIONS
- A4.14 - BUILDING PLAN AND ELEVATIONS
- A4.15 - BUILDING PLAN AND ELEVATIONS
- A4.16 - BUILDING PLAN AND ELEVATIONS
- A4.17 - BUILDING PLAN AND ELEVATIONS
- A4.18 - BUILDING PLAN AND ELEVATIONS
- A4.19 - BUILDING PLAN AND ELEVATIONS
- A4.20 - BUILDING PLAN AND ELEVATIONS
- A5.1 - WALL SECTIONS



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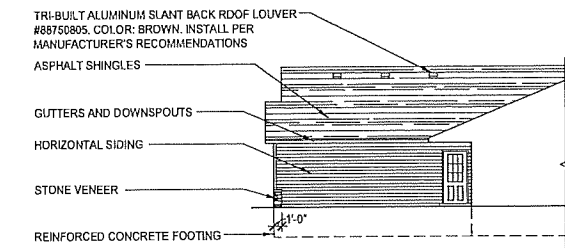
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TITLE SHEET  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
REDWOOD ROCHESTER HILLS  
E. AVON ROAD  
ROCHESTER HILLS, MI

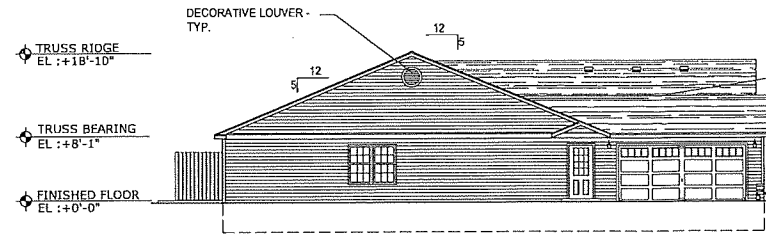
**G1.0**  
1 OF 1

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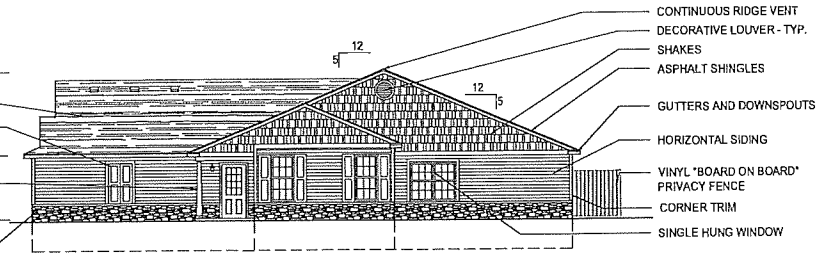


**6 PARTIAL SIDE ELEVATION**  
A4.1 SCALE: 3/32" = 1'-0"



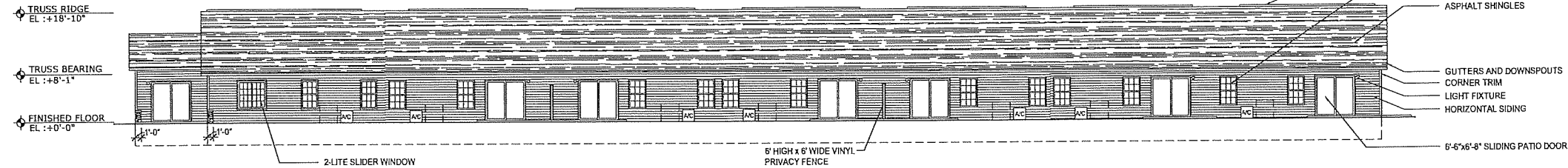
**5 STANDARD SIDE ELEVATION**  
A4.1 SCALE: 3/32" = 1'-0"

NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY

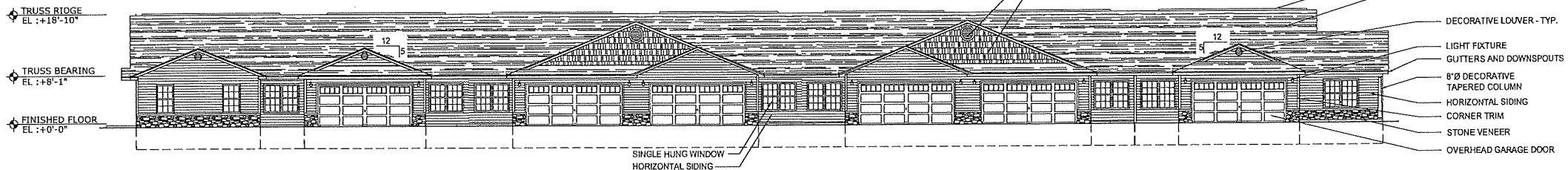


**4 HIGH PROFILE SIDE ELEVATION**  
A4.1 SCALE: 3/32" = 1'-0"

FACES EAST AVON ROAD



**3 REAR ELEVATION**  
A4.1 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.1 SCALE: 3/32" = 1'-0"

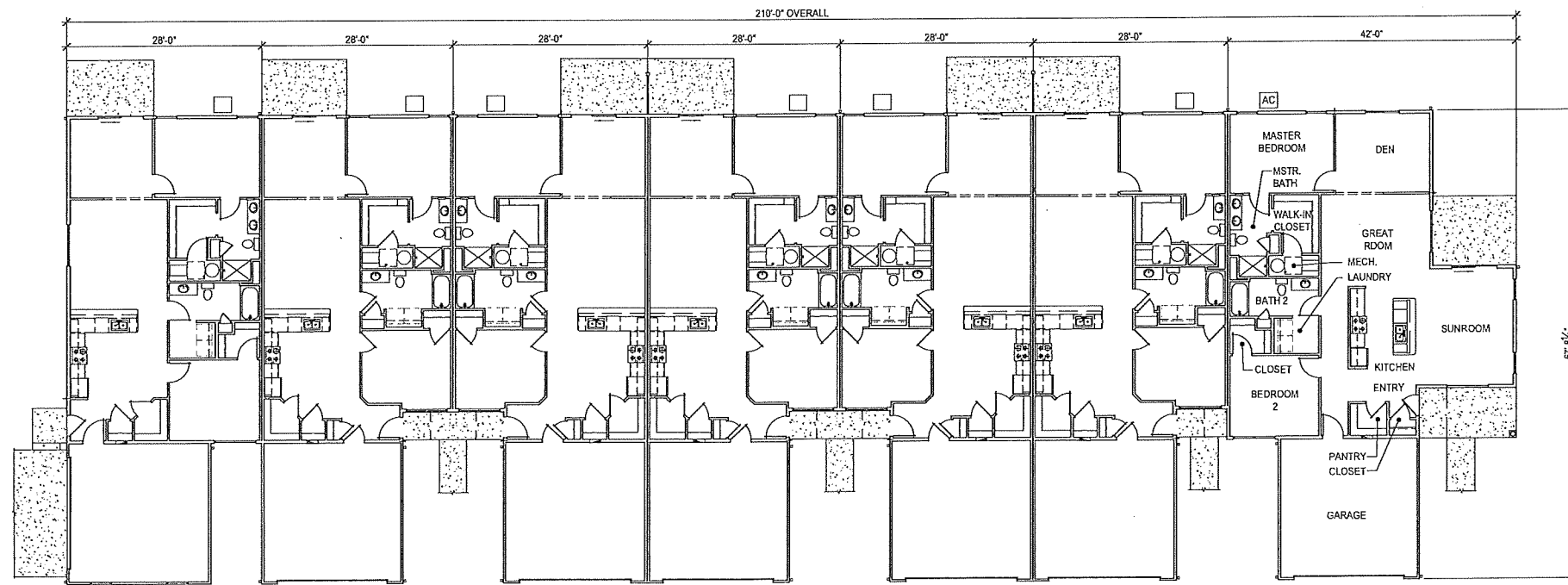
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:  | PERCENT OF ELEVATION COVERAGE |
|-------------------------|--|-------------------------------|
| BUILDING FLOOR AREA:    | 12,389 SQ. FT.                               |                               |
| FRONT PORCH AREA:       | 273 SQ. FT.<br>39 SQ. FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 46%                           |
| VINYL (SIDING / SHAKES) |  | 43%                           |
| STONE                   |  | 5%                            |
| COLUMNS                 |  | 0.2%                          |
| <b>REAR ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 32%                           |
| VINYL (SIDING / SHAKES) |  | 68%                           |
| STONE                   |  | 0.3%                          |
| COLUMNS                 |  | N/A                           |
| <b>LEFT ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 21%                           |
| VINYL (SIDING / SHAKES) |  | 75%                           |
| STONE                   |  | 0.3%                          |
| COLUMNS                 |  | N/A                           |
| <b>RIGHT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 11%                           |
| VINYL (SIDING / SHAKES) |  | 71%                           |
| STONE                   |  | 18%                           |
| COLUMNS                 |  | 1%                            |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" x 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.



**1 OVERALL FLOOR PLAN**  
A4.1 SCALE: 3/32" = 1'-0"

BUILDING A

NOTE:  
(1) SIDE  
ELEVATION  
FACES EAST  
AVON ROAD

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ARCHITECTS  
mpg-architects.com

BUILDING PLAN AND ELEVATIONS

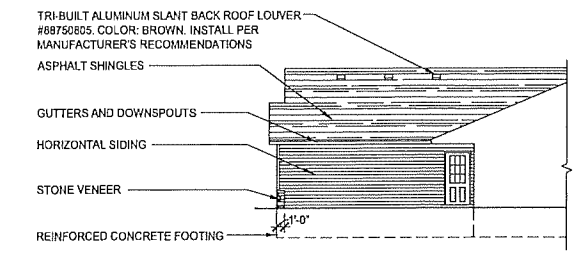
DATE: AUGUST 27, 2019

PROJECT #: 6919

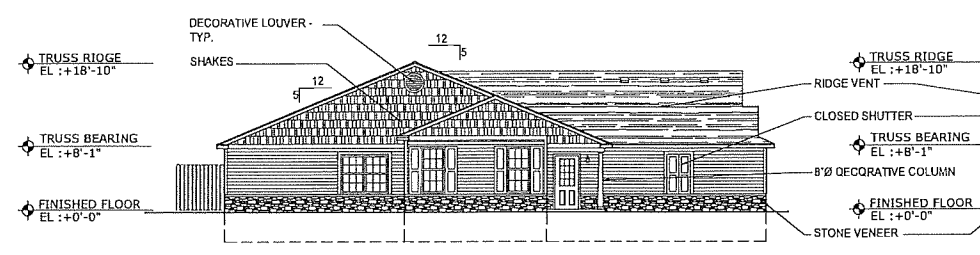
REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

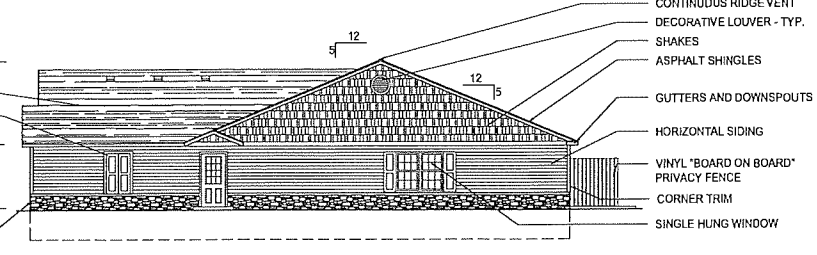
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1 OF 20



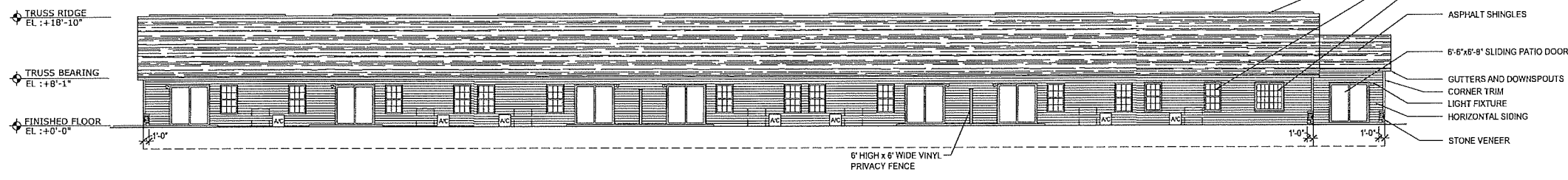
**6 PARTIAL SIDE ELEVATION**  
A4.2 SCALE: 3/32" = 1'-0"



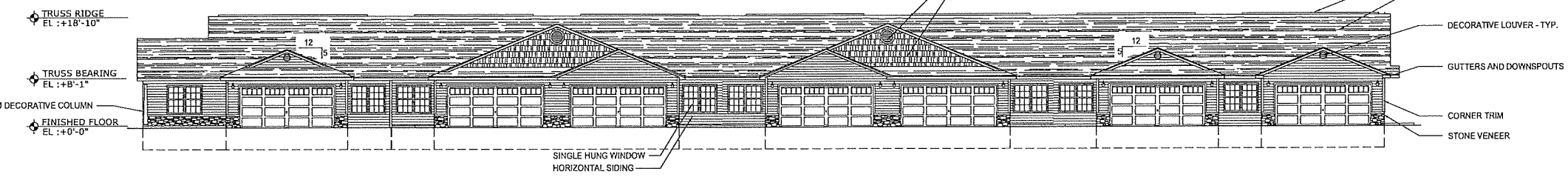
**5 HIGH PROFILE SIDE ELEVATION**  
A4.2 SCALE: 3/32" = 1'-0" FACES EAST AVON ROAD



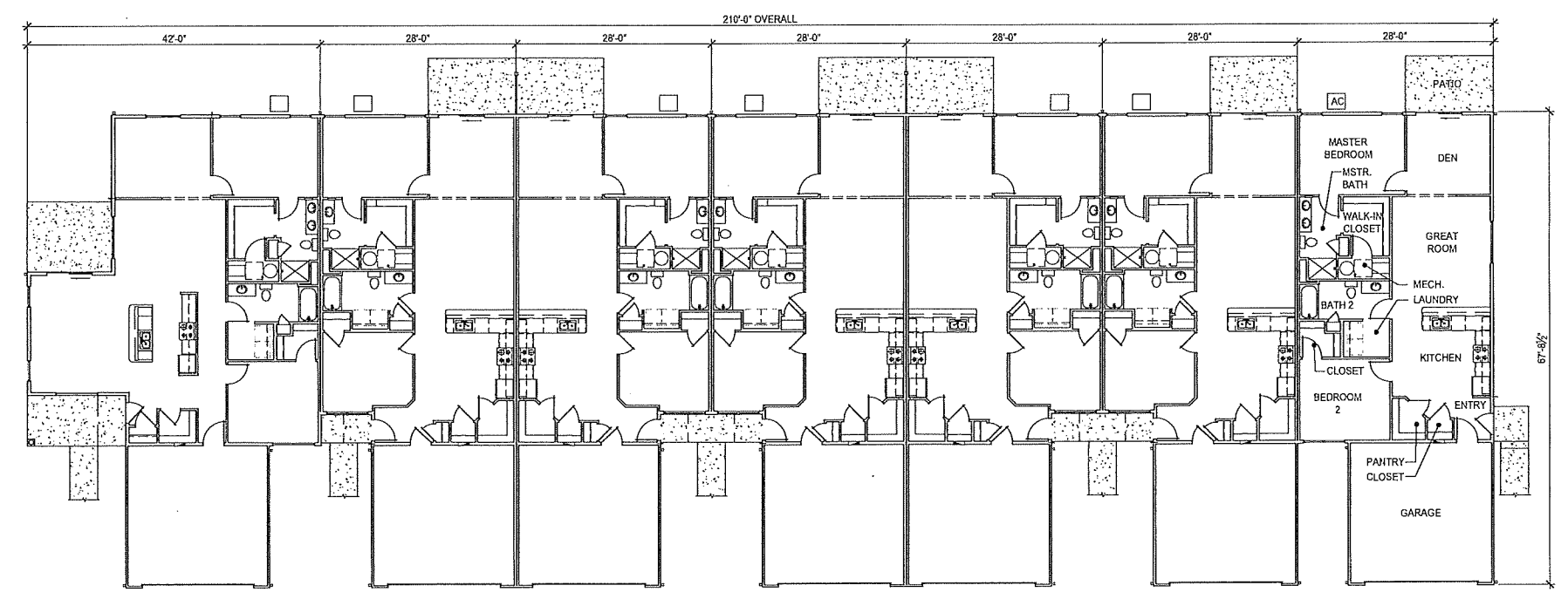
**4 HIGH PROFILE SIDE ELEVATION**  
A4.2 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.2 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.2 SCALE: 3/32" = 1'-0"



**1 OVERALL FLOOR PLAN**  
A4.2 SCALE: 3/32" = 1'-0" BUILDING B

**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM                    | AREA                         | PERCENT OF ELEVATION COVERAGE |
|-------------------------|------------------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 12,389 SQ.FT.                |                               |
| FRONT PORCH AREA:       | 273 SQ.FT.                   |                               |
|                         | 39 SQ.FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>  |                              |                               |
| DOORS / WINDOWS         |                              | 50%                           |
| VINYL (SIDING / SHAKES) |                              | 45%                           |
| STONE                   |                              | 5%                            |
| COLUMNS                 |                              | 0.2%                          |
| <b>REAR ELEVATION</b>   |                              |                               |
| DOORS / WINDOWS         |                              | 32%                           |
| VINYL (SIDING / SHAKES) |                              | 68%                           |
| STONE                   |                              | 0.5%                          |
| COLUMNS                 |                              | N/A                           |
| <b>LEFT ELEVATION</b>   |                              |                               |
| DOORS / WINDOWS         |                              | 11%                           |
| VINYL (SIDING / SHAKES) |                              | 71%                           |
| STONE                   |                              | 18%                           |
| COLUMNS                 |                              | 1%                            |
| <b>RIGHT ELEVATION</b>  |                              |                               |
| DOORS / WINDOWS         |                              | 6%                            |
| VINYL (SIDING / SHAKES) |                              | 75%                           |
| STONE                   |                              | 16%                           |
| COLUMNS                 |                              | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM                             | MATERIAL / STYLE              | COLOR   |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

NOTE:  
(1) SIDE ELEVATION FACES EAST AVON ROAD

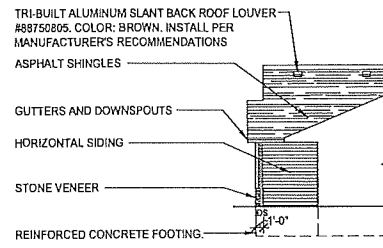
**PRELIMINARY**  
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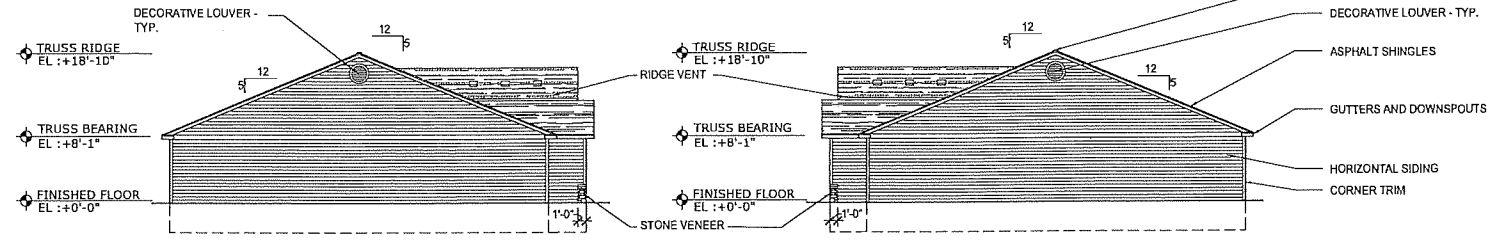
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fax 330.666.8812  
3660 Embassy Parkway  
Fairlawn, OH 44333

**MPG ARCHITECTS**  
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**BUILDING PLAN AND ELEVATIONS**  
PROJECT #: 6919 DATE: AUGUST 27, 2019  
**REDWOOD ROCHESTER HILLS**  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN 48307

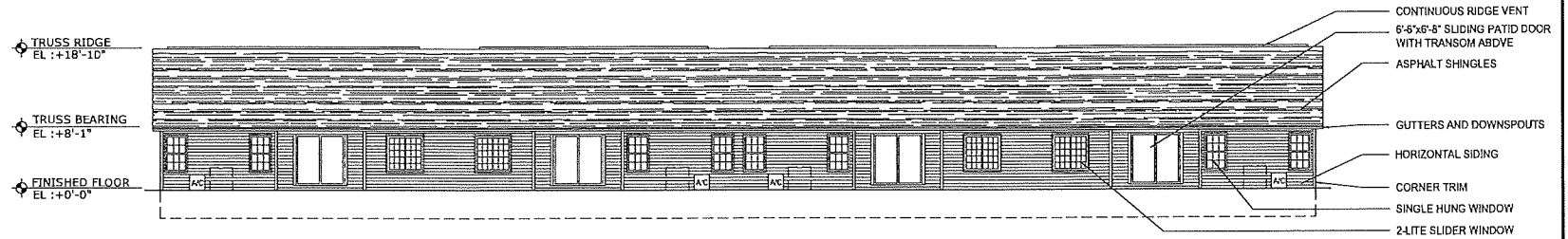


**6 PARTIAL SIDE ELEVATION**  
A4.3 SCALE: 3/32" = 1'-0"

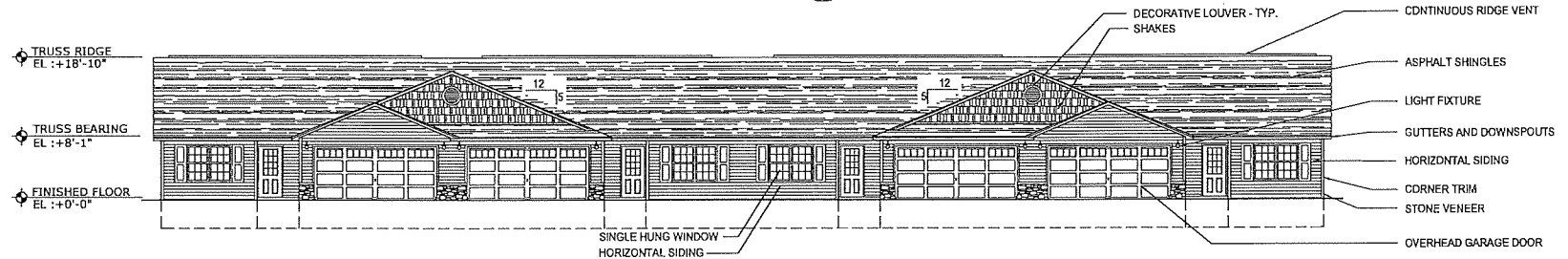


**5 STANDARD SIDE ELEVATION**  
A4.3 SCALE: 3/32" = 1'-0"

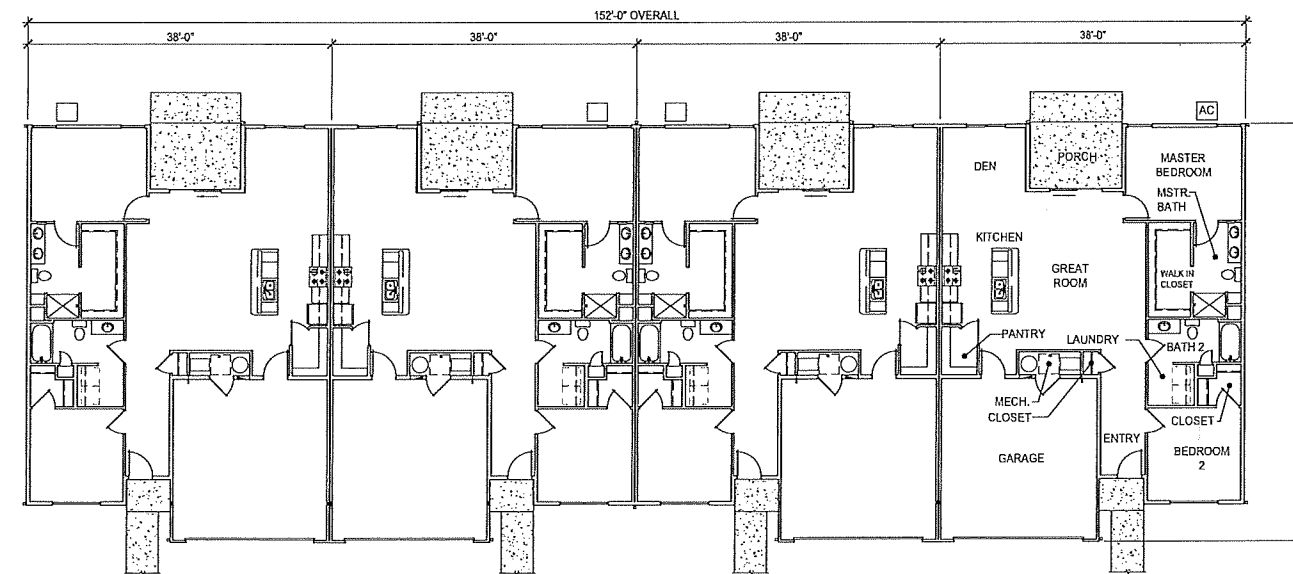
**4 STANDARD SIDE ELEVATION**  
A4.3 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.3 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.3 SCALE: 3/32" = 1'-0"



**1 OVERALL FLOOR PLAN**  
A4.3 SCALE: 3/32" = 1'-0" BUILDINGS C, D

**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:               | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 7,138 SQ. FT.       |                               |
| FRONT PORCH AREA:       | 88 SQ. FT.          |                               |
|                         | 22 SQ. FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                     |                               |
| DOORS / WINDOWS         |                     | 44%                           |
| VINYL (SIDING / SHAKES) |                     | 53%                           |
| STONE                   |                     | 3%                            |
| COLUMNS                 |                     | N/A                           |
| <b>REAR ELEVATION</b>   |                     |                               |
| DOORS / WINDOWS         |                     | 33%                           |
| VINYL (SIDING / SHAKES) |                     | 67%                           |
| STONE                   |                     | N/A                           |
| COLUMNS                 |                     | N/A                           |
| <b>LEFT ELEVATION</b>   |                     |                               |
| DOORS / WINDOWS         |                     | 0%                            |
| VINYL (SIDING / SHAKES) |                     | 99.7%                         |
| STONE                   |                     | 0.3%                          |
| COLUMNS                 |                     | N/A                           |
| <b>RIGHT ELEVATION</b>  |                     |                               |
| DOORS / WINDOWS         |                     | 0%                            |
| VINYL (SIDING / SHAKES) |                     | 99.7%                         |
| STONE                   |                     | 0.3%                          |
| COLUMNS                 |                     | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

**PRELIMINARY**

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**MPG ARCHITECTS**  
MANN • PARSONS • GRAY

BUILDING PLAN AND ELEVATIONS

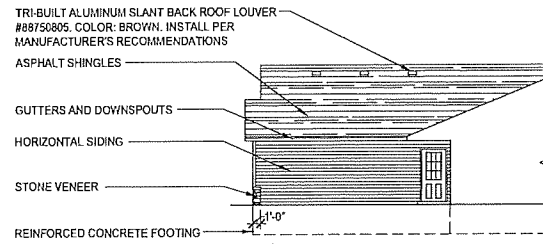
DATE: AUGUST 27, 2019

PROJECT #: 6919

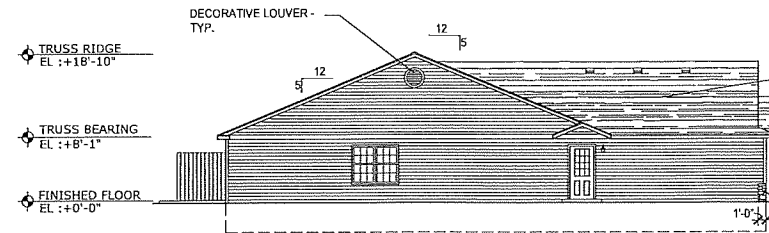
**REDWOOD ROCHESTER HILLS**

E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

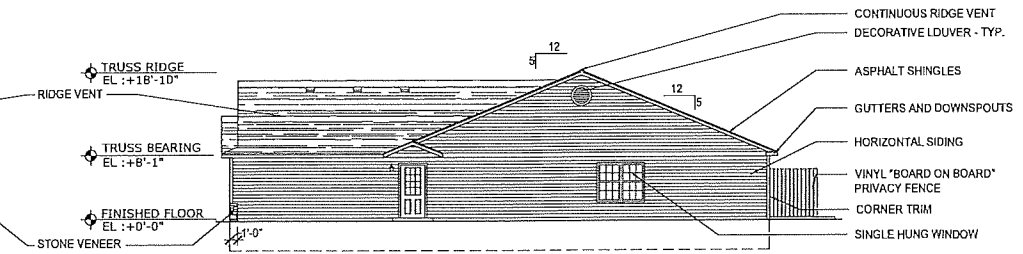
**A4.3**  
3 OF 20



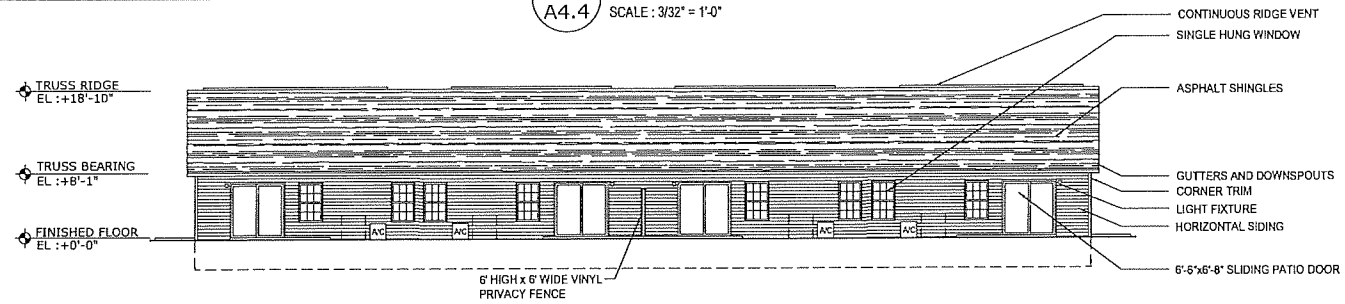
6 PARTIAL SIDE ELEVATION  
A4.4 SCALE: 3/32" = 1'-0"



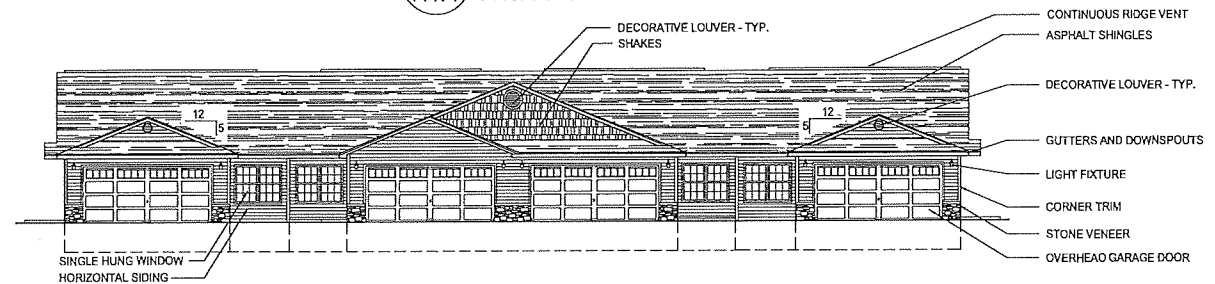
5 STANDARD SIDE ELEVATION  
A4.4 SCALE: 3/32" = 1'-0"



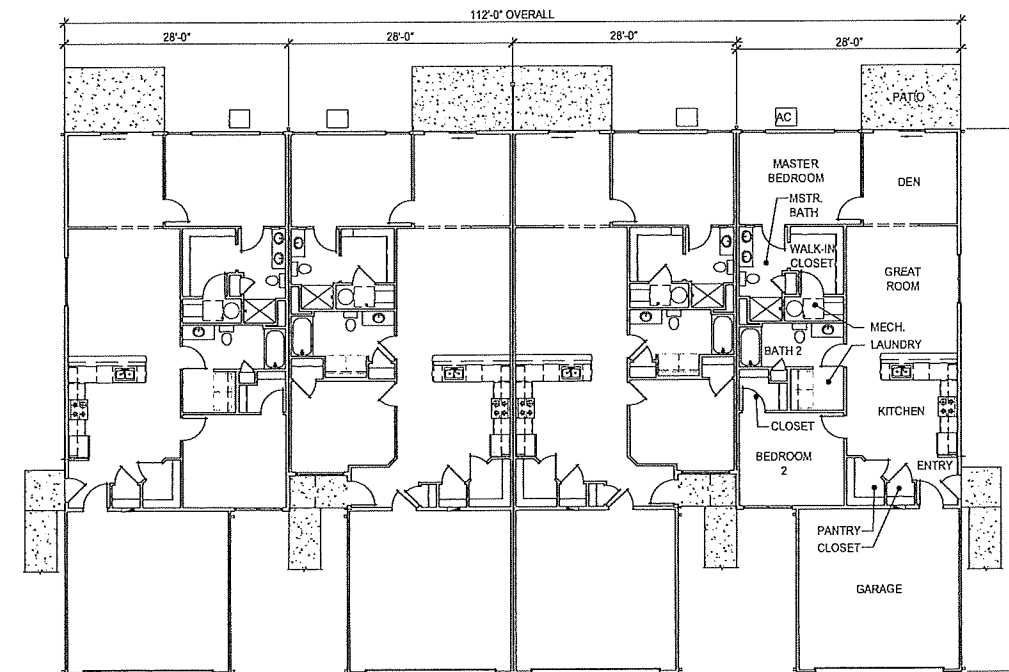
4 STANDARD SIDE ELEVATION  
A4.4 SCALE: 3/32" = 1'-0"



3 REAR ELEVATION  
A4.4 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION  
A4.4 SCALE: 3/32" = 1'-0"



1 OVERALL FLOOR PLAN  
A4.4 SCALE: 3/32" = 1'-0"

BUILDING EXTERIOR FINISH INFORMATION

| ITEM:                   | AREA:                        | PERCENT OF ELEVATION COVERAGE |
|-------------------------|------------------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 6,924 SQ.FT.                 |                               |
| FRONT PORCH AREA:       | 108 SQ.FT.                   |                               |
|                         | 27 SQ.FT. PER UNIT (AVERAGE) |                               |
| FRONT ELEVATION         |                              |                               |
| DOORS / WINDOWS         |                              | 46%                           |
| VINYL (SIDING / SHAKES) |                              | 47%                           |
| STONE                   |                              | 7%                            |
| COLUMNS                 |                              | N/A                           |
| REAR ELEVATION          |                              |                               |
| DOORS / WINDOWS         |                              | 33%                           |
| VINYL (SIDING / SHAKES) |                              | 67%                           |
| STONE                   |                              | 0.3%                          |
| COLUMNS                 |                              | N/A                           |
| LEFT ELEVATION          |                              |                               |
| DOORS / WINDOWS         |                              | 6%                            |
| VINYL (SIDING / SHAKES) |                              | 93%                           |
| STONE                   |                              | 0.3%                          |
| COLUMNS                 |                              | N/A                           |
| RIGHT ELEVATION         |                              |                               |
| DOORS / WINDOWS         |                              | 6%                            |
| VINYL (SIDING / SHAKES) |                              | 93%                           |
| STONE                   |                              | 0.3%                          |
| COLUMNS                 |                              | N/A                           |

EXTERIOR FINISH MATERIAL SELECTIONS

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-5" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

PRELIMINARY

NOTE!!!  
THIS DRAWING IS NOT FOR CONSTRUCTION

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ARCHITECTS

BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307



A4.4  
4 OF 20



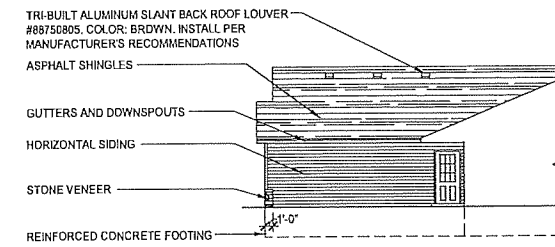
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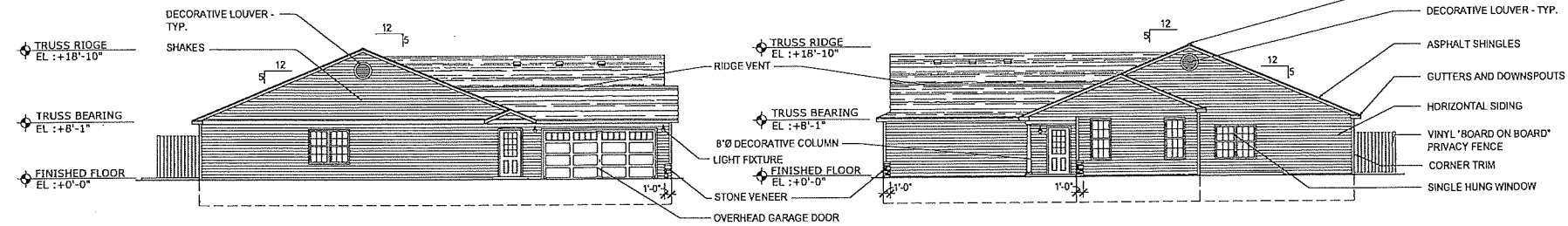
BUILDING PLAN AND ELEVATIONS  
PROJECT #: 8919  
DATE: AUGUST 27, 2019  
**REDWOOD ROCHESTER HILLS**  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

**A4.5**  
5 OF 20



**6 PARTIAL SIDE ELEVATION**

A4.5 SCALE: 3/32" = 1'-0"

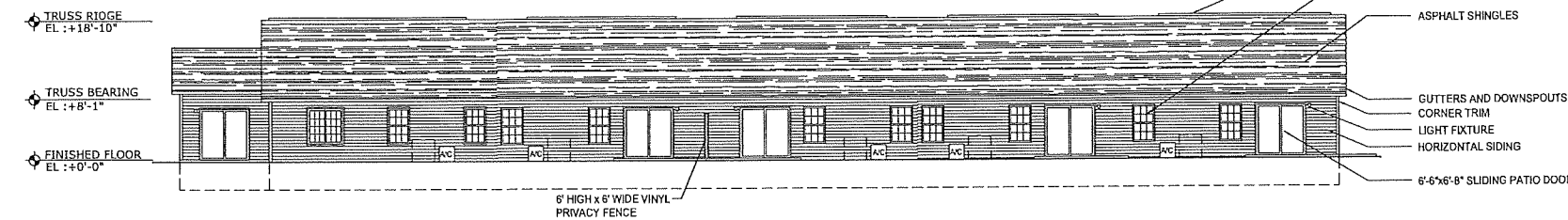


**5 STANDARD SIDE ELEVATION**

A4.5 SCALE: 3/32" = 1'-0"

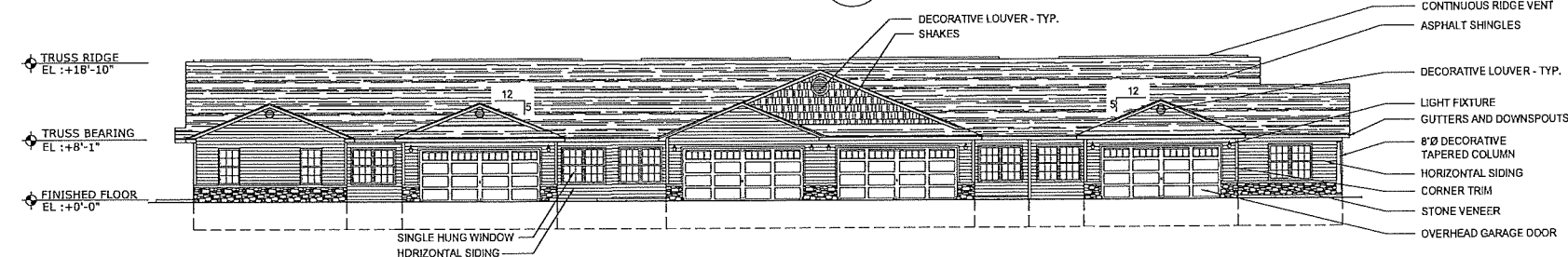
**4 STANDARD SIDE ELEVATION**

A4.5 SCALE: 3/32" = 1'-0"



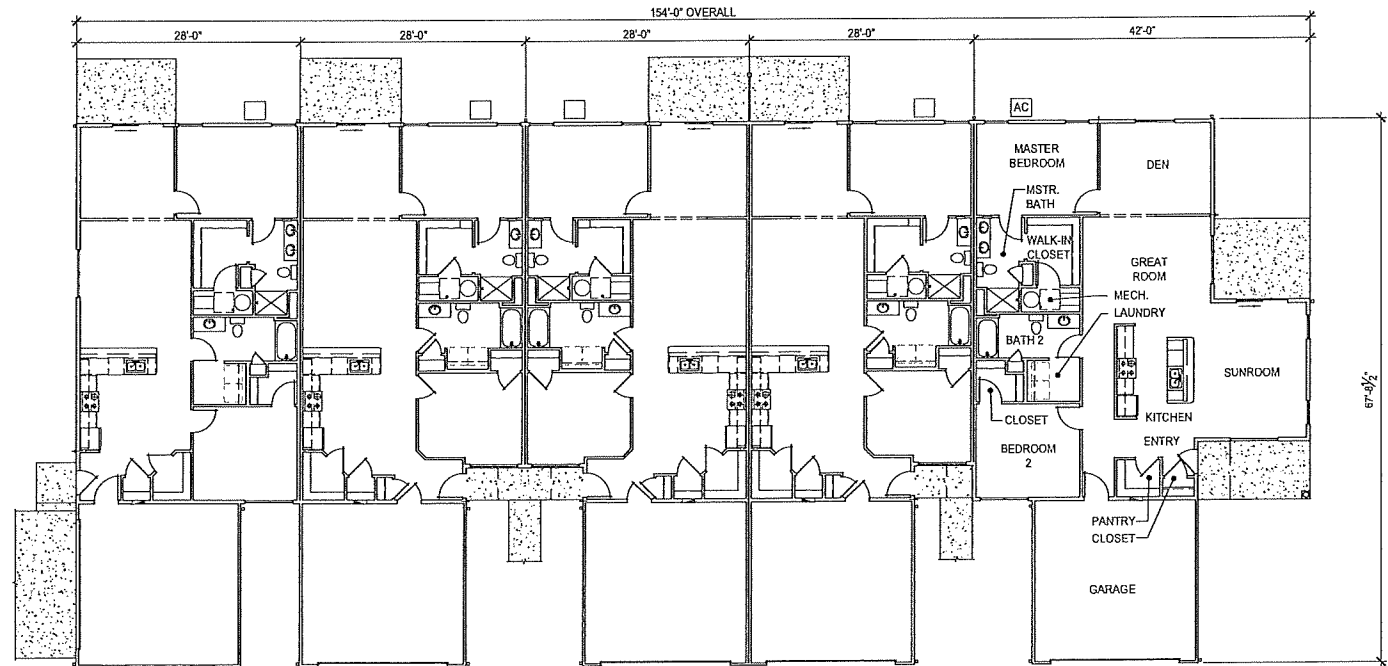
**3 REAR ELEVATION**

A4.5 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**

A4.5 SCALE: 3/32" = 1'-0"



**1 OVERALL FLOOR PLAN**

A4.5 SCALE: 3/32" = 1'-0"

BUILDING F

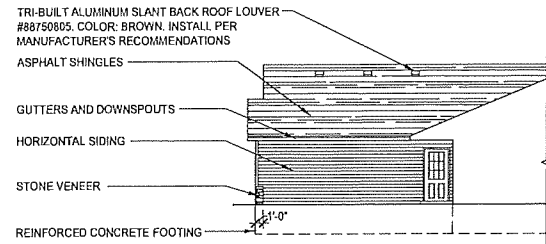
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:                                      | PERCENT OF ELEVATION COVERAGE |
|-------------------------|--|-------------------------------|
| BUILDING FLOOR AREA:    | 8,930 SQ.FT.                               |                               |
| FRONT PORCH AREA:       | 215 SQ.FT.<br>43 SQ.FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 51%                           |
| VINYL (SIDING / SHAKES) |  | 40%                           |
| STONE                   |  | 9%                            |
| COLUMNS                 |  | 0.3%                          |
| <b>REAR ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 31%                           |
| VINYL (SIDING / SHAKES) |  | 69%                           |
| STONE                   |  | 0.0%                          |
| COLUMNS                 |  | N/A                           |
| <b>LEFT ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 21%                           |
| VINYL (SIDING / SHAKES) |  | 79%                           |
| STONE                   |  | 0.3%                          |
| COLUMNS                 |  | N/A                           |
| <b>RIGHT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 11%                           |
| VINYL (SIDING / SHAKES) |  | 71%                           |
| STONE                   |  | 18%                           |
| COLUMNS                 |  | 1%                            |

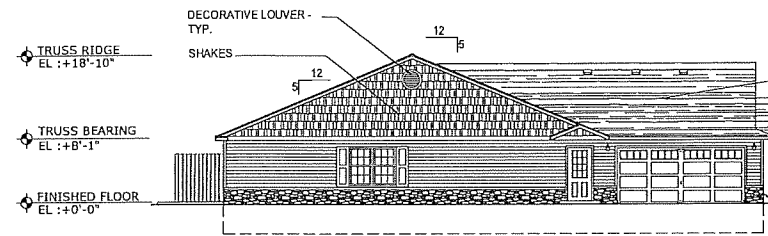
**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

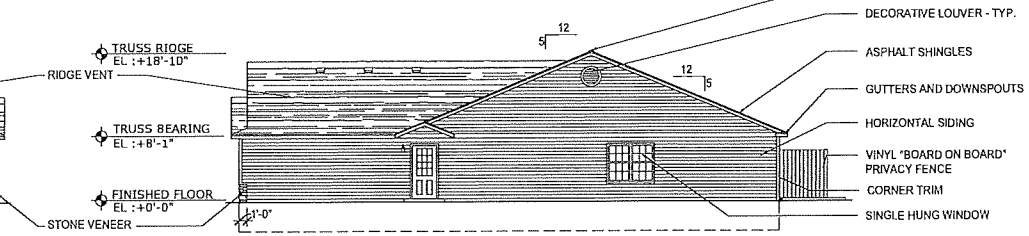


**6 PARTIAL SIDE ELEVATION**  
A4.6 SCALE: 3/32" = 1'-0"

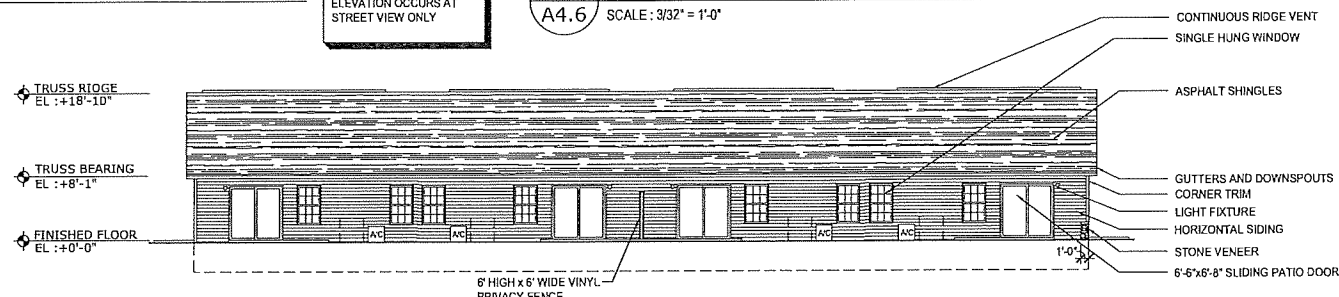


**5 HIGH PROFILE SIDE ELEVATION**  
A4.6 SCALE: 3/32" = 1'-0"

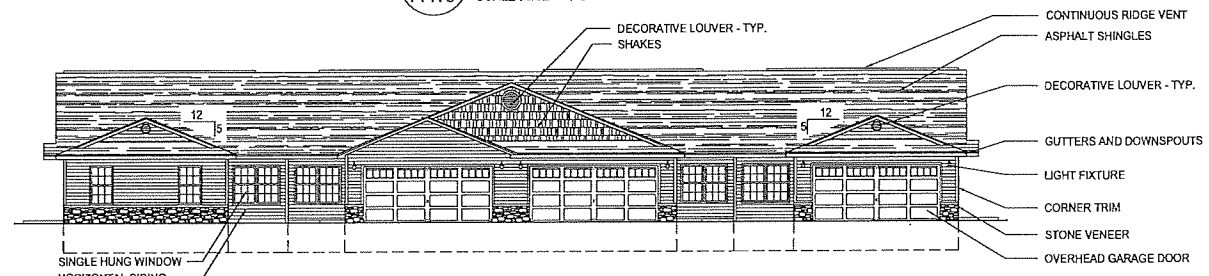
NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY



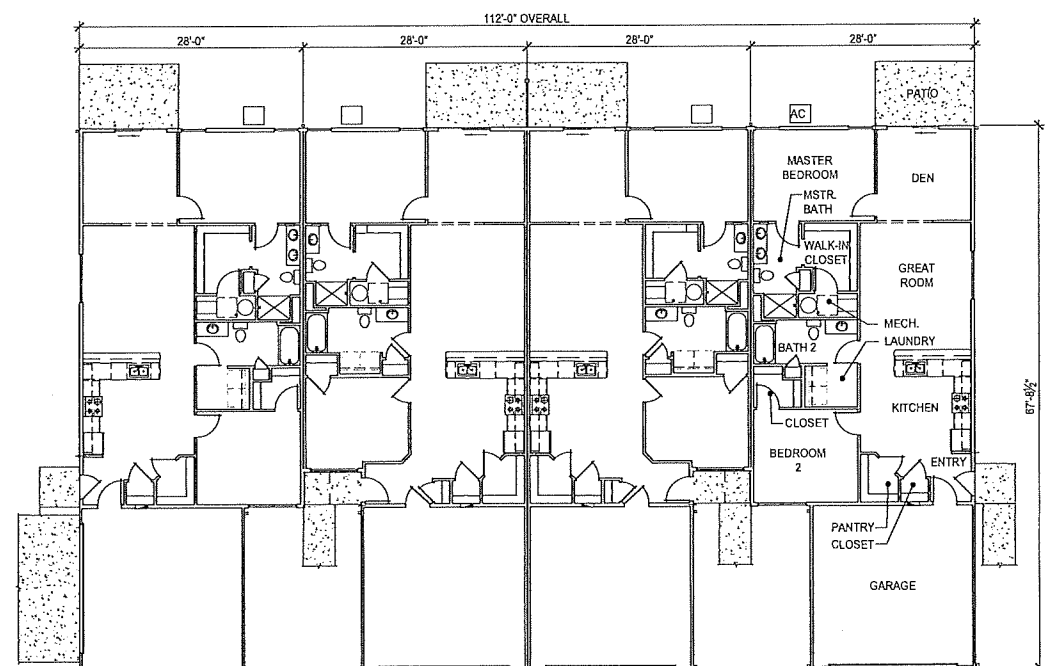
**4 STANDARD SIDE ELEVATION**  
A4.6 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.6 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.6 SCALE: 3/32" = 1'-0"



**1 OVERALL FLOOR PLAN**  
A4.6 SCALE: 3/32" = 1'-0"

BUILDINGS G, K

| BUILDING EXTERIOR FINISH INFORMATION |                              |                               |
|--------------------------------------|------------------------------|-------------------------------|
| ITEM:                                | AREA:                        | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 6,924 SQ.FT.                 |                               |
| FRONT PORCH AREA:                    | 108 SQ.FT.                   |                               |
|                                      | 27 SQ.FT. PER UNIT (AVERAGE) |                               |
| FRONT ELEVATION                      |                              |                               |
| DOORS / WINDOWS                      |                              | 46%                           |
| VINYL (SIDING / SHAKES)              |                              | 47%                           |
| STONE                                |                              | 7%                            |
| COLUMNS                              |                              | N/A                           |
| REAR ELEVATION                       |                              |                               |
| DOORS / WINDOWS                      |                              | 33%                           |
| VINYL (SIDING / SHAKES)              |                              | 67%                           |
| STONE                                |                              | 0.3%                          |
| COLUMNS                              |                              | N/A                           |
| LEFT ELEVATION                       |                              |                               |
| DOORS / WINDOWS                      |                              | 21%                           |
| VINYL (SIDING / SHAKES)              |                              | 67%                           |
| STONE                                |                              | 13%                           |
| COLUMNS                              |                              | N/A                           |
| RIGHT ELEVATION                      |                              |                               |
| DOORS / WINDOWS                      |                              | 6%                            |
| VINYL (SIDING / SHAKES)              |                              | 93%                           |
| STONE                                |                              | 0.3%                          |
| COLUMNS                              |                              | N/A                           |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

**PRELIMINARY**  
NOTE!!!  
THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

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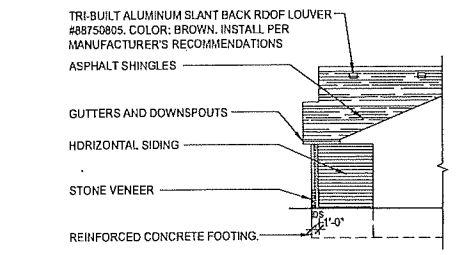
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mpg-architects.com

BUILDING PLAN AND ELEVATIONS  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
REDWOOD ROCHESTER HILLS  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

**A4.6**  
6 OF 20

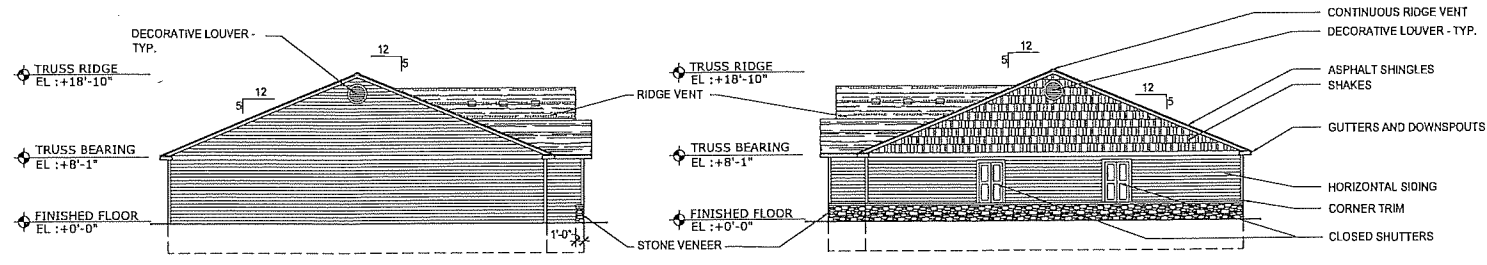
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FOR CONSTRUCTION

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**6 PARTIAL SIDE ELEVATION**

A4.7 SCALE: 3/32" = 1'-0"



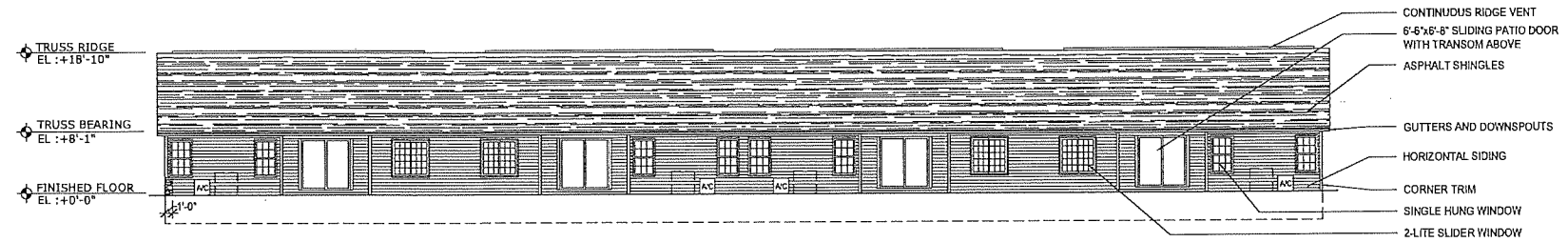
**5 STANDARD SIDE ELEVATION**

A4.7 SCALE: 3/32" = 1'-0"

**4 HIGH PROFILE SIDE ELEVATION**

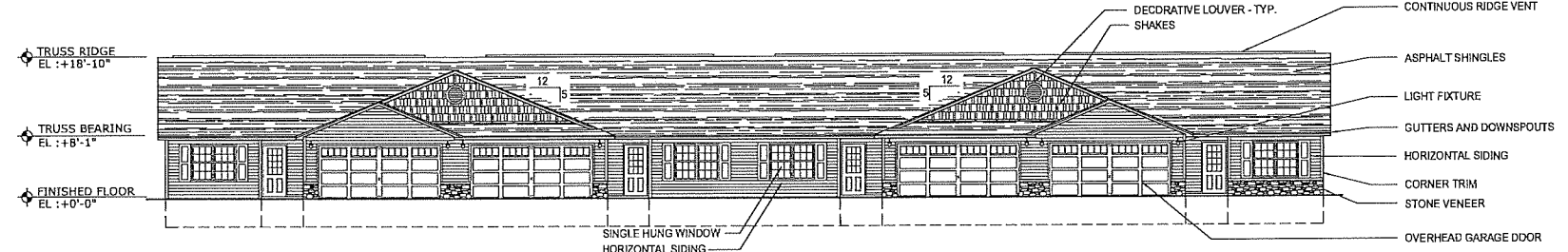
A4.7 SCALE: 3/32" = 1'-0"

NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY



**3 REAR ELEVATION**

A4.7 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**

A4.7 SCALE: 3/32" = 1'-0"

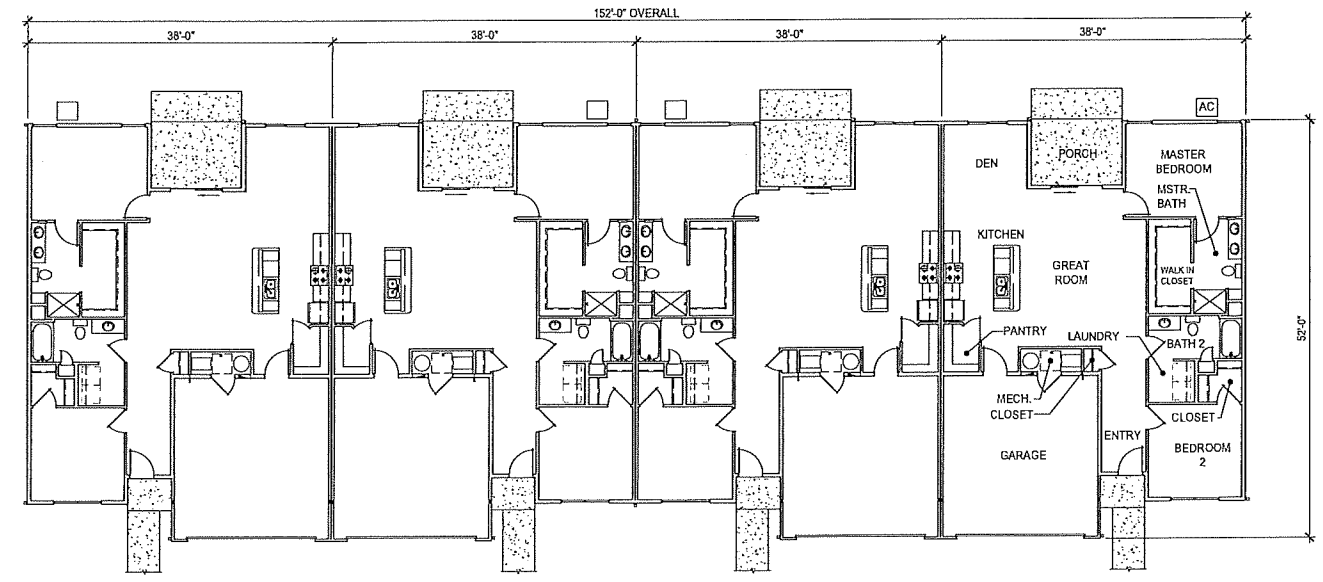
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:                           | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---------------------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 7,139 SQ.FT.                    |                               |
| FRONT PORCH AREA:       | 68 SQ.FT.<br>22 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                                 |                               |
| DOORS / WINDOWS         |                                 | 44%                           |
| VINYL (SIDING / SHAKES) |                                 | 51%                           |
| STONE                   |                                 | 5%                            |
| COLUMNS                 |                                 | N/A                           |
| <b>REAR ELEVATION</b>   |                                 |                               |
| DOORS / WINDOWS         |                                 | 33%                           |
| VINYL (SIDING / SHAKES) |                                 | 67%                           |
| STONE                   |                                 | 0.2%                          |
| COLUMNS                 |                                 | N/A                           |
| <b>LEFT ELEVATION</b>   |                                 |                               |
| DOORS / WINDOWS         |                                 | 0%                            |
| VINYL (SIDING / SHAKES) |                                 | 87%                           |
| STONE                   |                                 | 13%                           |
| COLUMNS                 |                                 | N/A                           |
| <b>RIGHT ELEVATION</b>  |                                 |                               |
| DOORS / WINDOWS         |                                 | 0%                            |
| VINYL (SIDING / SHAKES) |                                 | 99.7%                         |
| STONE                   |                                 | 0.3%                          |
| COLUMNS                 |                                 | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 8'-6" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.



**1 OVERALL FLOOR PLAN**

A4.7 SCALE: 3/32" = 1'-0"

BUILDINGS H

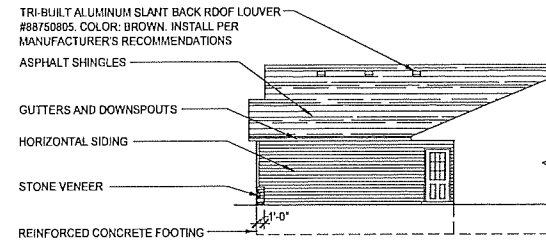
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Fairlawn, OH 44333

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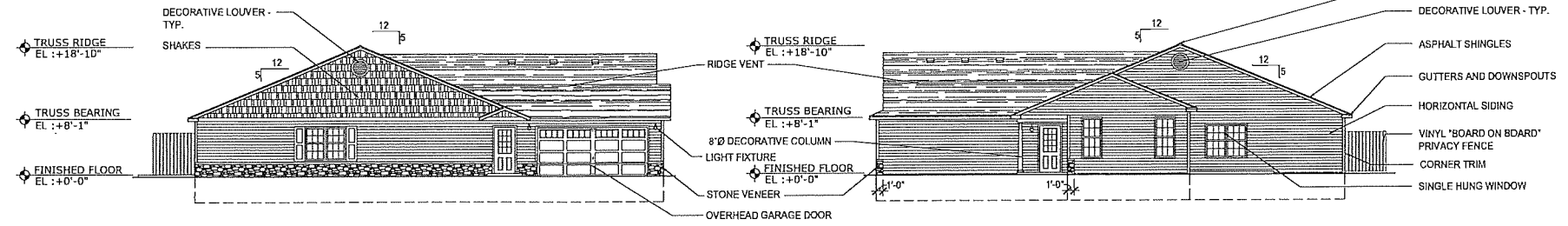
BUILDING PLAN AND ELEVATIONS  
PROJECT #: 6919  
DATE: AUGUST 27, 2019

**REDWOOD ROCHESTER HILLS**  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

**A4.7**  
7 OF 20



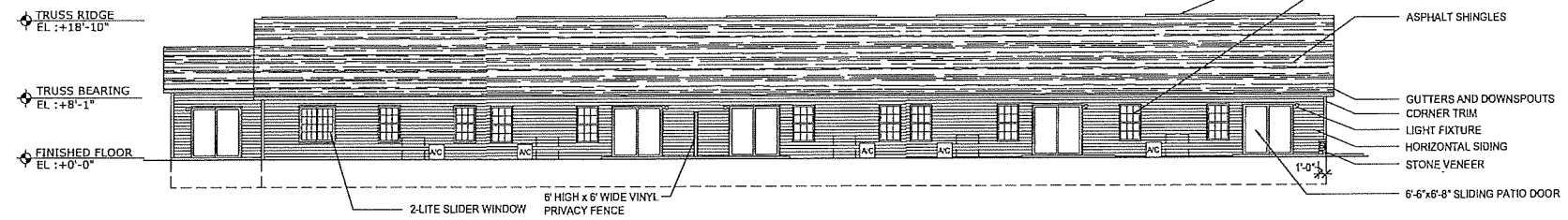
**6 PARTIAL SIDE ELEVATION**  
A4.8 SCALE: 3/32" = 1'-0"



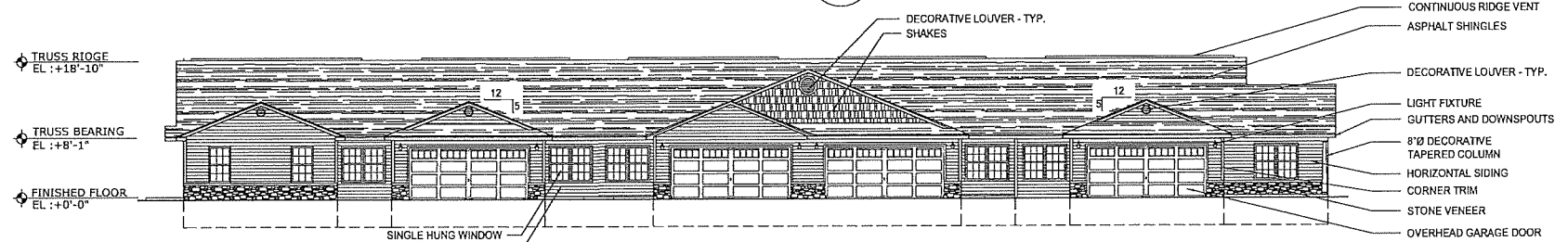
**5 HIGH PROFILE SIDE ELEVATION**  
A4.8 SCALE: 3/32" = 1'-0"

NOTE: HIGH PROFILE SIDE ELEVATION OCCURS AT STREET VIEW ONLY

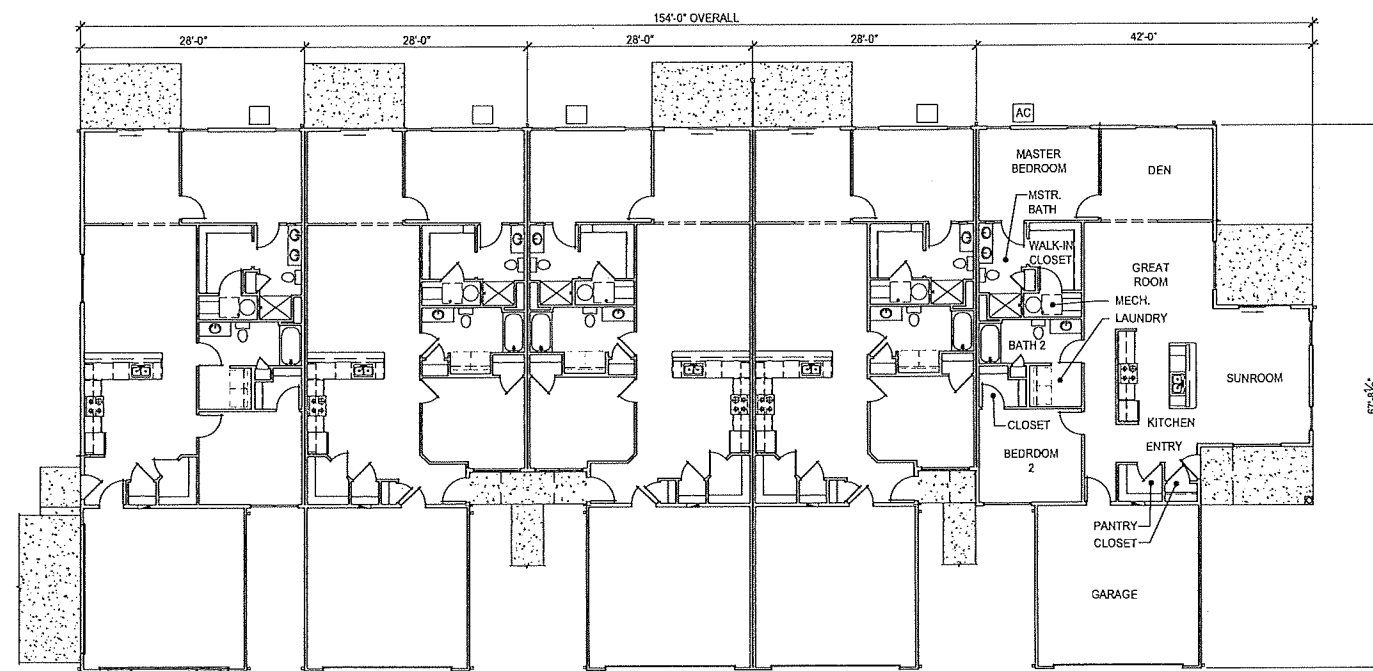
**4 STANDARD SIDE ELEVATION**  
A4.8 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.8 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.8 SCALE: 3/32" = 1'-0"



**1 OVERALL FLOOR PLAN**  
A4.8 SCALE: 3/32" = 1'-0"

BUILDING J

**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:                                      | PERCENT OF ELEVATION COVERAGE |
|-------------------------|--|-------------------------------|
| BUILDING FLOOR AREA:    | 8,930 SQ.FT.                               |                               |
| FRONT PORCH AREA:       | 215 SQ.FT.<br>43 SQ.FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 51%                           |
| VINYL (SIDING / SHAKES) |  | 40%                           |
| STONE                   |  | 9%                            |
| COLUMNS                 |  | 0.3%                          |
| <b>REAR ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 31%                           |
| VINYL (SIDING / SHAKES) |  | 88%                           |
| STONE                   |  | 0.2%                          |
| COLUMNS                 |  | N/A                           |
| <b>LEFT ELEVATION</b>   |  |                               |
| DOORS / WINDOWS         |  | 21%                           |
| VINYL (SIDING / SHAKES) |  | 67%                           |
| STONE                   |  | 13%                           |
| COLUMNS                 |  | N/A                           |
| <b>RIGHT ELEVATION</b>  |  |                               |
| DOORS / WINDOWS         |  | 11%                           |
| VINYL (SIDING / SHAKES) |  | 88%                           |
| STONE                   |  | 1%                            |
| COLUMNS                 |  | 1%                            |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PRE-FINISHED ALUMINUM         | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

**PRELIMINARY**

NOTE!!! THIS DRAWING IS NOT FOR CONSTRUCTION

REVISIONS

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BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

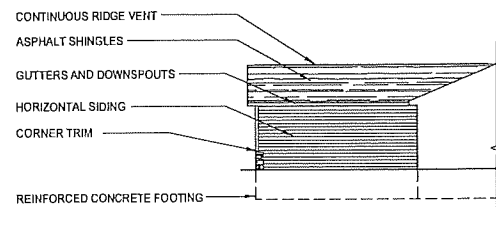
PROJECT #: 6919

REDWOOD ROCHESTER HILLS

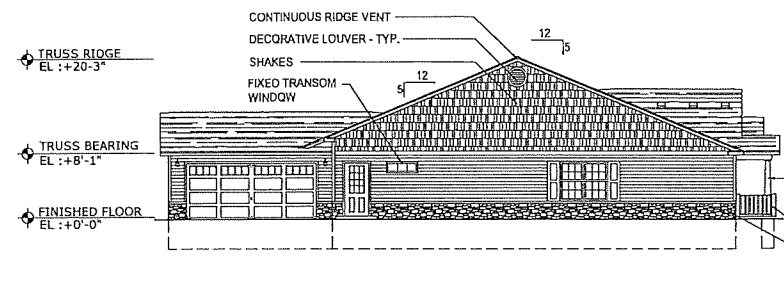
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307



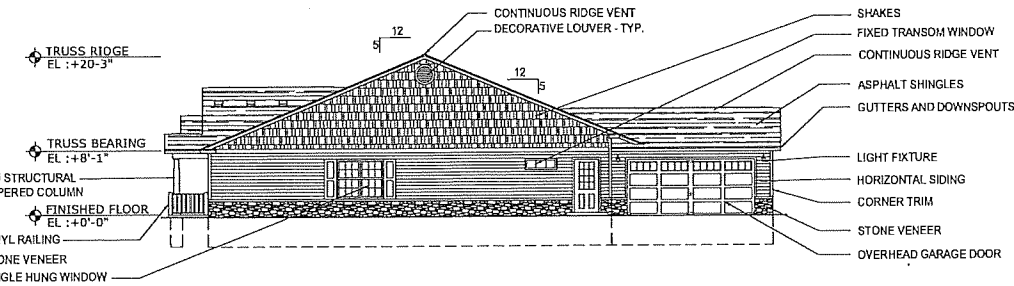
**A4.8**  
8 OF 20



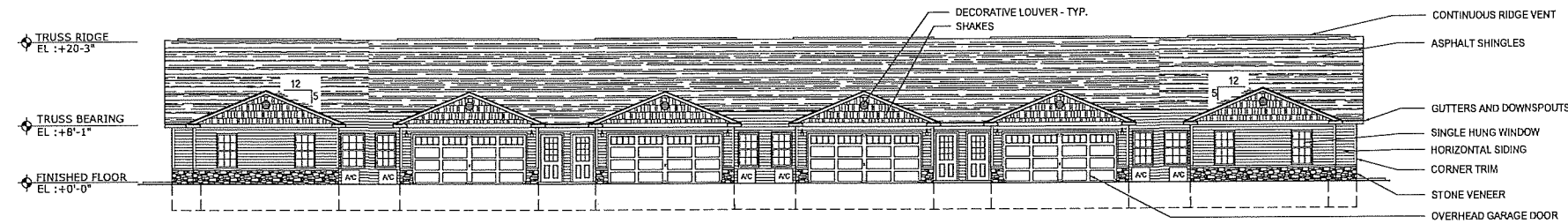
6 PARTIAL SIDE ELEVATION  
A4.9 SCALE: 3/32" = 1'-0"



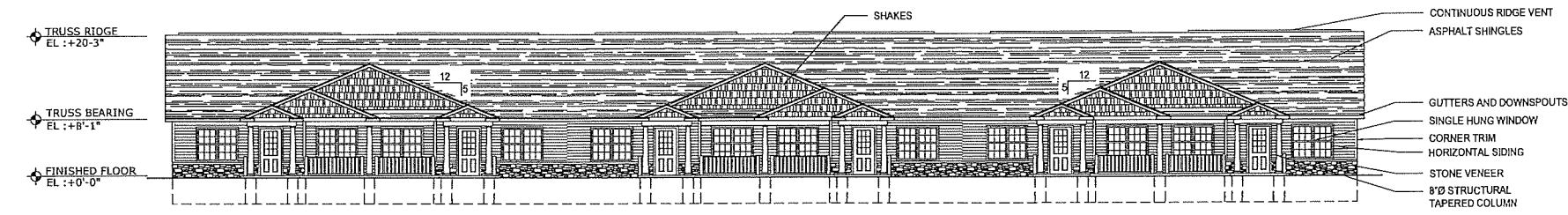
5 HIGH PROFILE SIDE ELEVATION  
A4.9 SCALE: 3/32" = 1'-0"



4 HIGH PROFILE SIDE ELEVATION  
A4.9 SCALE: 3/32" = 1'-0" FACES DEQUINDRE ROAD



3 REAR ELEVATION  
A4.9 SCALE: 3/32" = 1'-0"

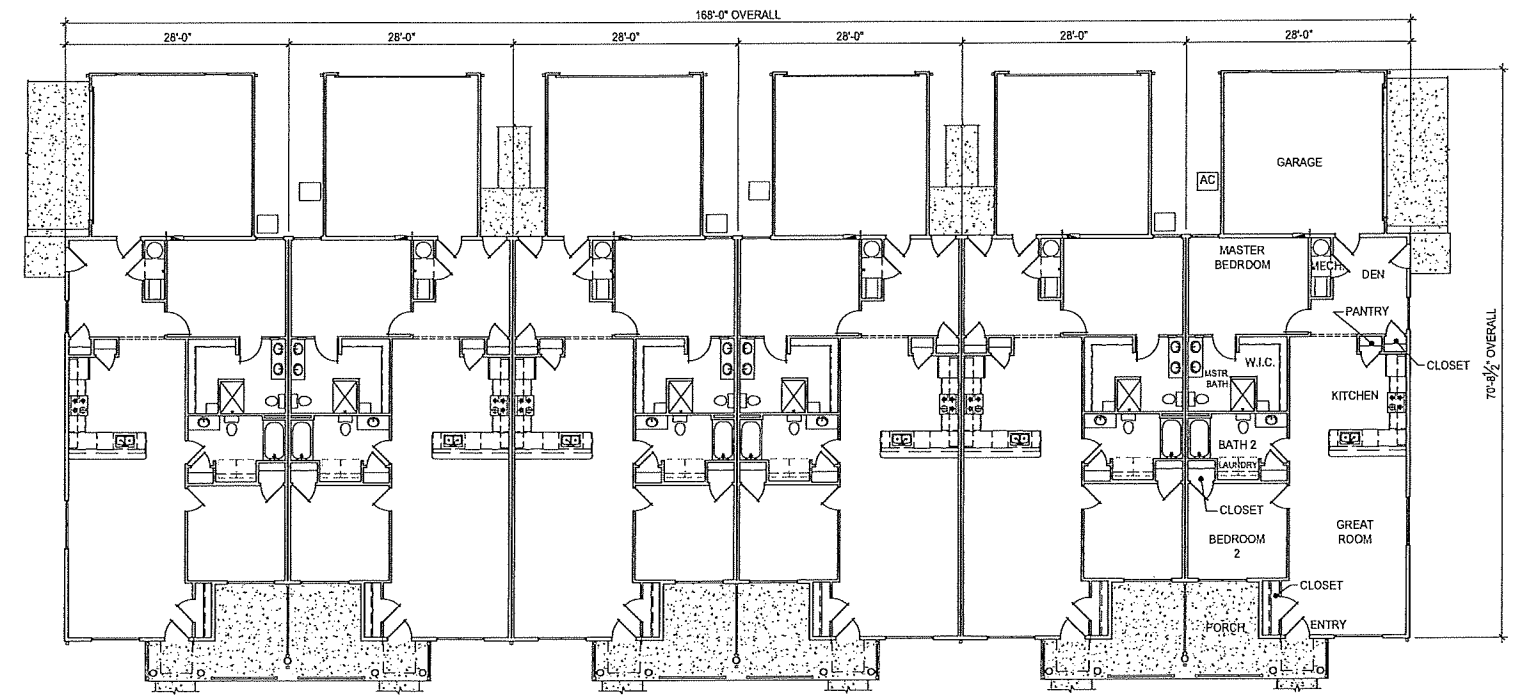


2 FRONT ELEVATION  
A4.9 SCALE: 3/32" = 1'-0" FACES DEQUINDRE ROAD

| BUILDING EXTERIOR FINISH INFORMATION |                                   |                               |
|--------------------------------------|-----------------------------------|-------------------------------|
| ITEM:                                | AREA:                             | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 10,464 SQ.FT.                     |                               |
| FRONT PORCH AREA:                    | 924 SQ.FT.<br>154 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>               |                                   |                               |
| DOORS / WINDOWS                      |                                   | 29%                           |
| VINYL (SIDING / SHAKES)              |                                   | 51%                           |
| STONE                                |                                   | 11%                           |
| COLUMNS                              |                                   | 3.8%                          |
| <b>REAR ELEVATION</b>                |                                   |                               |
| DOORS / WINDOWS                      |                                   | 41%                           |
| VINYL (SIDING / SHAKES)              |                                   | 51%                           |
| STONE                                |                                   | 8%                            |
| COLUMNS                              |                                   | N/A                           |
| <b>LEFT ELEVATION</b>                |                                   |                               |
| DOORS / WINDOWS                      |                                   | 19%                           |
| VINYL (SIDING / SHAKES)              |                                   | 68%                           |
| STONE                                |                                   | 13%                           |
| COLUMNS                              |                                   | 0.4%                          |
| <b>RIGHT ELEVATION</b>               |                                   |                               |
| DOORS / WINDOWS                      |                                   | 19%                           |
| VINYL (SIDING / SHAKES)              |                                   | 68%                           |
| STONE                                |                                   | 13%                           |
| COLUMNS                              |                                   | 0.4%                          |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-6" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE:  
FRONT AND (1) SIDE ELEVATION FACE DEQUINDRE ROAD



1 OVERALL FLOOR PLAN  
A4.9 SCALE: 3/32" = 1'-0" BUILDING L

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BUILDING PLAN AND ELEVATIONS

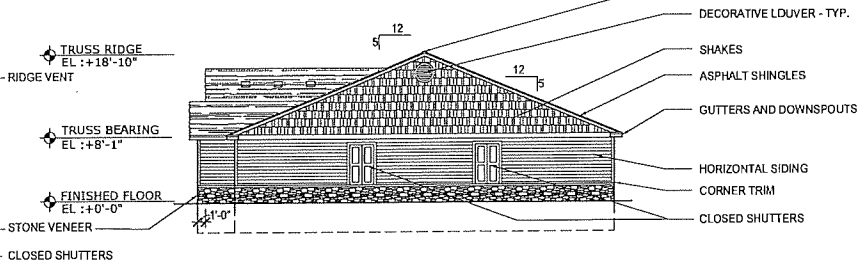
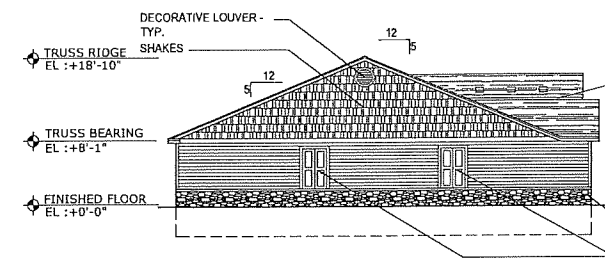
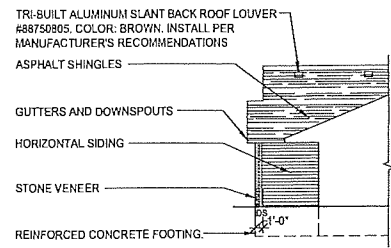
DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

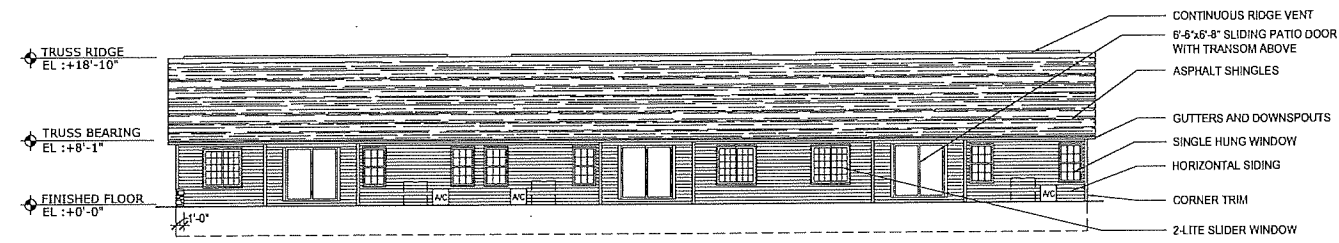
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**A4.9**  
9 OF 20

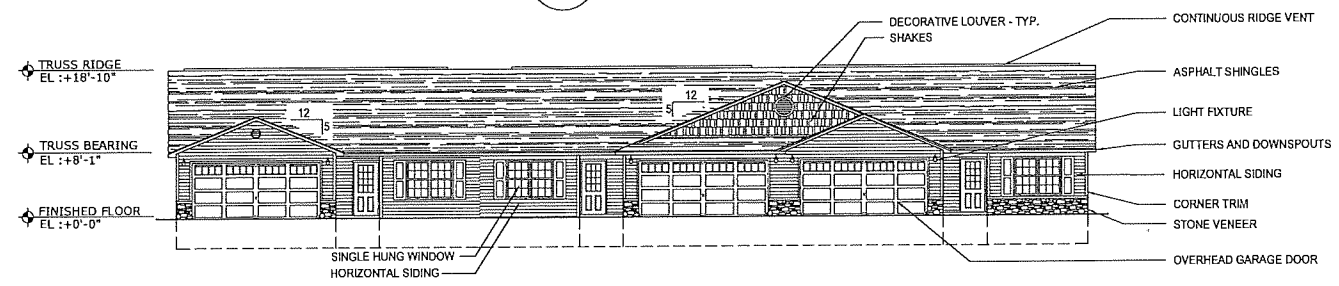


5 HIGH PROFILE SIDE ELEVATION  
A4.10 SCALE: 3/32" = 1'-0"

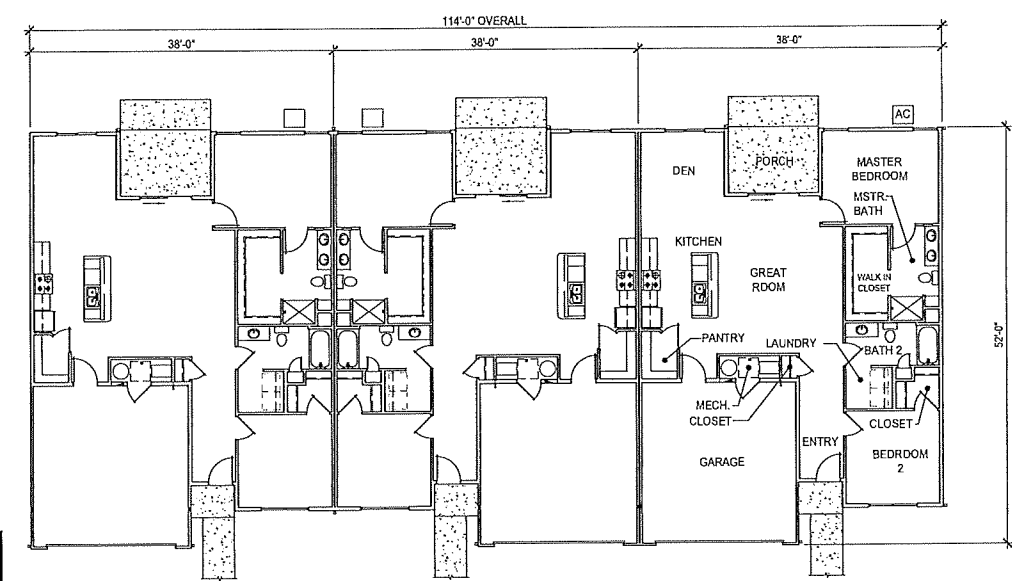
4 HIGH PROFILE SIDE ELEVATION  
A4.10 SCALE: 3/32" = 1'-0" FACES DEQUINDRE ROAD



3 REAR ELEVATION  
A4.10 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION  
A4.10 SCALE: 3/32" = 1'-0"



1 OVERALL FLOOR PLAN  
A4.10 SCALE: 3/32" = 1'-0" BUILDING M

NOTE:  
(1) SIDE ELEVATION  
FACES DEQUINDRE ROAD

6 PARTIAL SIDE ELEVATION  
A4.10 SCALE: 3/32" = 1'-0"

| BUILDING EXTERIOR FINISH INFORMATION |                     |                               |
|--------------------------------------|---------------------|-------------------------------|
| ITEM:                                | AREA:               | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 5,353 SQ. FT.       |                               |
| FRONT PORCH AREA:                    | 66 SQ. FT.          |                               |
|                                      | 22 SQ. FT. PER UNIT |                               |
| FRONT ELEVATION                      |                     |                               |
| DOORS / WINDOWS                      |                     | 45%                           |
| VINYL (SIDING / SHAKES)              |                     | 50%                           |
| STONE                                |                     | 5%                            |
| COLUMNS                              |                     | N/A                           |
| REAR ELEVATION                       |                     |                               |
| DOORS / WINDOWS                      |                     | 33%                           |
| VINYL (SIDING / SHAKES)              |                     | 67%                           |
| STONE                                |                     | 0.3%                          |
| COLUMNS                              |                     | N/A                           |
| LEFT ELEVATION                       |                     |                               |
| DOORS / WINDOWS                      |                     | 0%                            |
| VINYL (SIDING / SHAKES)              |                     | 87%                           |
| STONE                                |                     | 13%                           |
| COLUMNS                              |                     | N/A                           |
| RIGHT ELEVATION                      |                     |                               |
| DOORS / WINDOWS                      |                     | 0%                            |
| VINYL (SIDING / SHAKES)              |                     | 87%                           |
| STONE                                |                     | 13%                           |
| COLUMNS                              |                     | N/A                           |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

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NOTE!!!  
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**BUILDING PLAN AND ELEVATIONS**

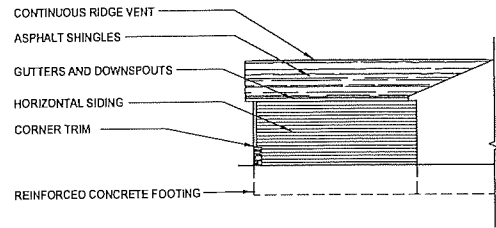
PROJECT #: 6919 DATE: AUGUST 27, 2019

**REDWOOD ROCHESTER HILLS**

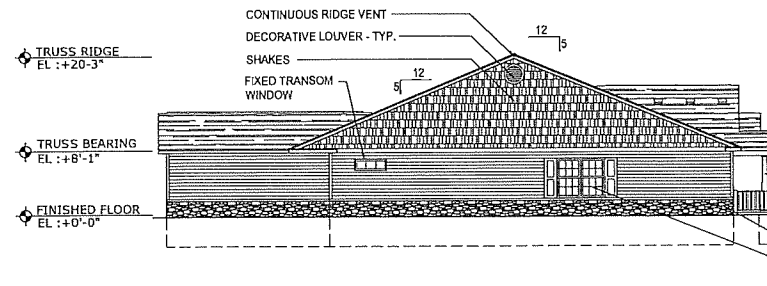
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ROCHESTER HILLS, MICHIGAN  
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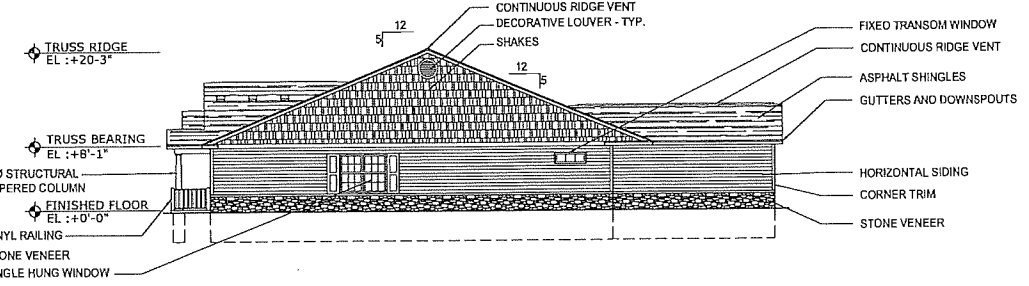
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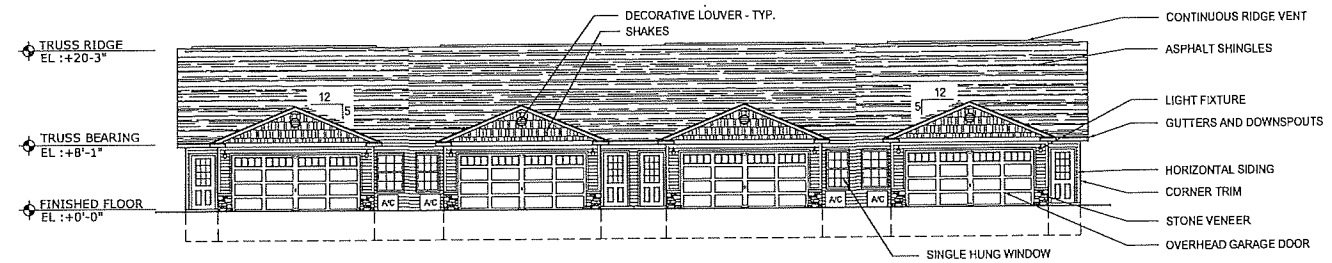
**6 PARTIAL SIDE ELEVATION**  
A4.11 SCALE: 3/32" = 1'-0"



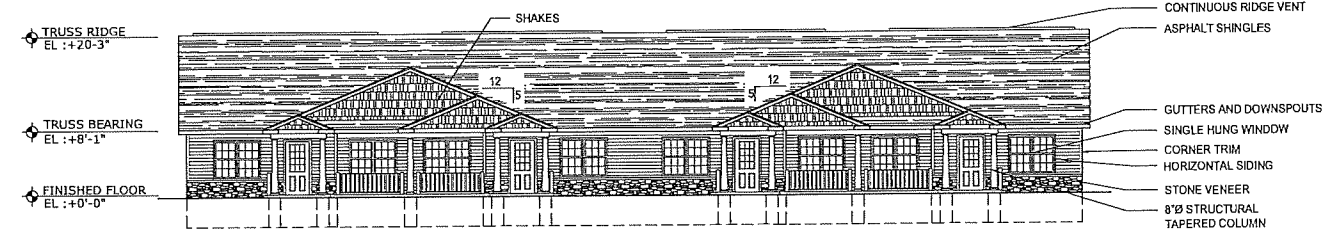
**5 HIGH PROFILE SIDE ELEVATION**  
A4.11 SCALE: 3/32" = 1'-0"



**4 HIGH PROFILE SIDE ELEVATION**  
A4.11 SCALE: 3/32" = 1'-0"

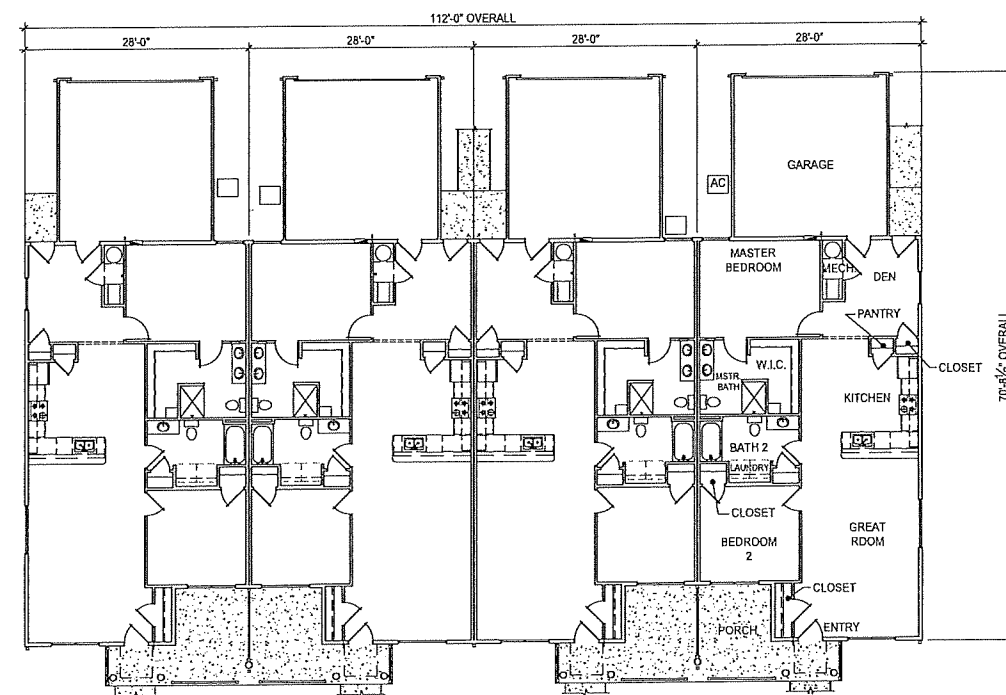


**3 REAR ELEVATION**  
A4.11 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.11 SCALE: 3/32" = 1'-0"

FACES DEQUINDRE ROAD



**1 OVERALL FLOOR PLAN**  
A4.11 SCALE: 3/32" = 1'-0"

BUILDING N

NOTE:  
FRONT ELEVATION  
FACES DEQUINDRE ROAD

**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:                             | PERCENT OF ELEVATION COVERAGE |
|-------------------------|-----------------------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 6,975 SQ.FT.                      |                               |
| FRONT PORCH AREA        | 616 SQ.FT.<br>154 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                                   |                               |
| DOORS / WINDOWS         |                                   | 28%                           |
| VINYL (SIDING / SHAKES) |                                   | 61%                           |
| STONE                   |                                   | 11%                           |
| COLUMNS                 |                                   | 3.6%                          |
| <b>REAR ELEVATION</b>   |                                   |                               |
| DOORS / WINDOWS         |                                   | 53%                           |
| VINYL (SIDING / SHAKES) |                                   | 44%                           |
| STONE                   |                                   | 3%                            |
| COLUMNS                 |                                   | N/A                           |
| <b>LEFT ELEVATION</b>   |                                   |                               |
| DOORS / WINDOWS         |                                   | 4%                            |
| VINYL (SIDING / SHAKES) |                                   | 80%                           |
| STONE                   |                                   | 16%                           |
| COLUMNS                 |                                   | 0.4%                          |
| <b>RIGHT ELEVATION</b>  |                                   |                               |
| DOORS / WINDOWS         |                                   | 4%                            |
| VINYL (SIDING / SHAKES) |                                   | 80%                           |
| STONE                   |                                   | 16%                           |
| COLUMNS                 |                                   | 0.4%                          |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

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BUILDING PLAN AND ELEVATIONS

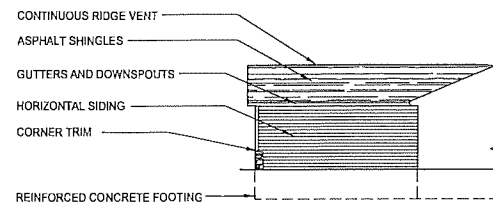
DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

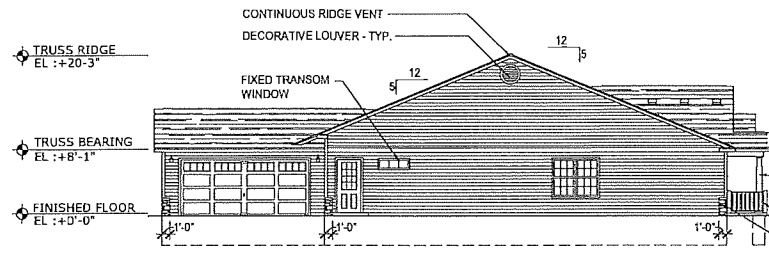
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6 PARTIAL SIDE ELEVATION

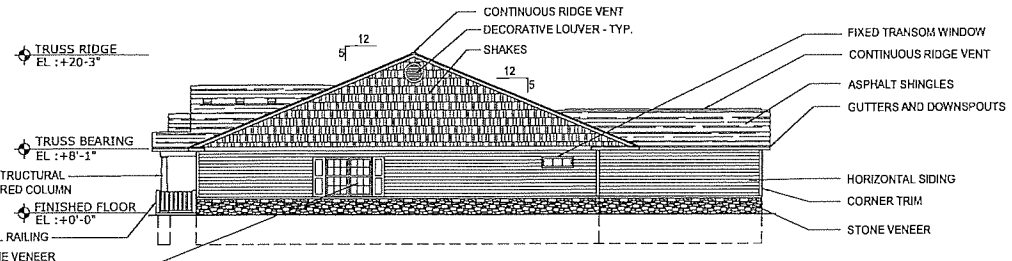
A4.12 SCALE: 3/32" = 1'-0"



5 STANDARD SIDE ELEVATION

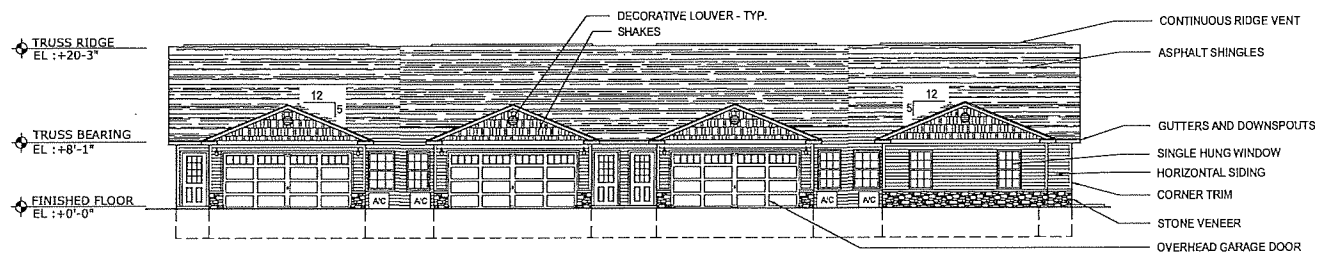
A4.12 SCALE: 3/32" = 1'-0"

NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY



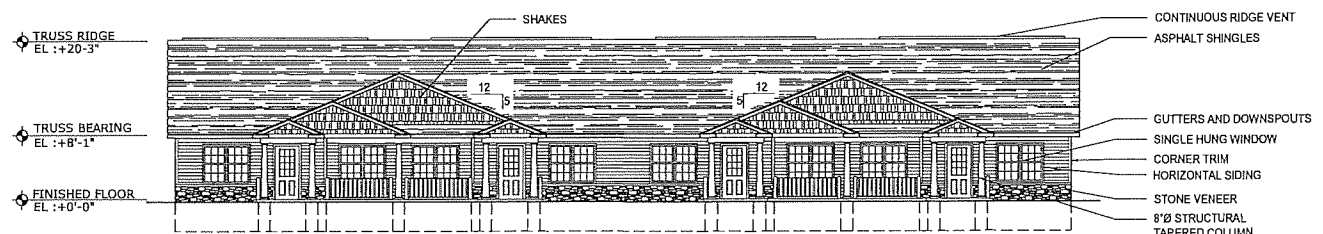
4 HIGH PROFILE SIDE ELEVATION

A4.12 SCALE: 3/32" = 1'-0"



3 REAR ELEVATION

A4.12 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION

A4.12 SCALE: 3/32" = 1'-0"

FACES DEQUINDRE ROAD

**BUILDING EXTERIOR FINISH INFORMATION**

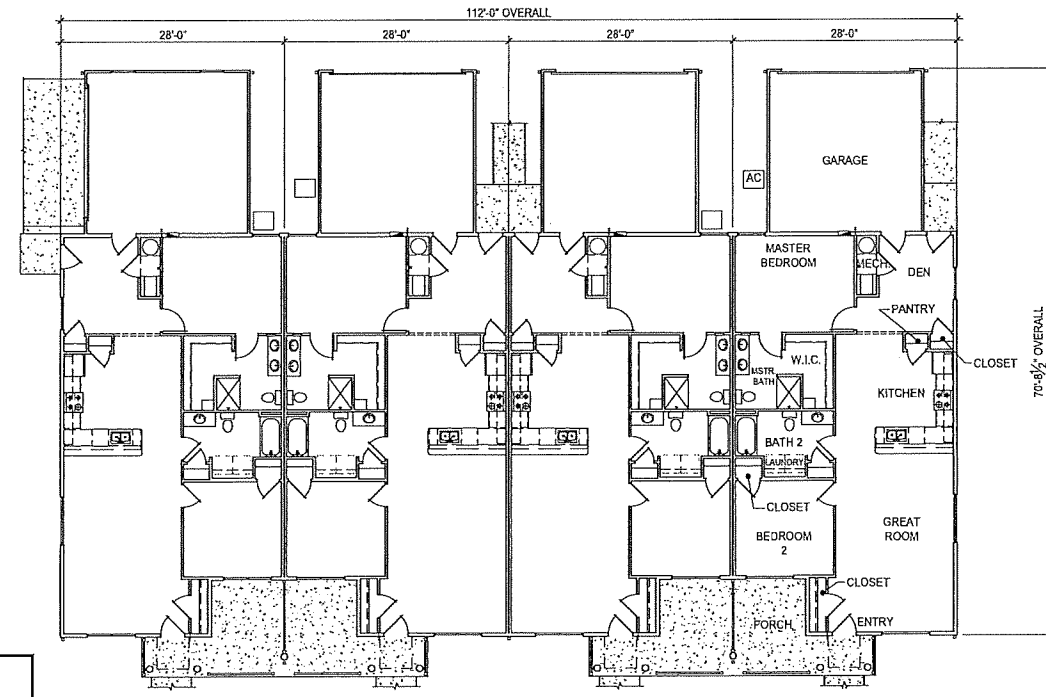
| ITEM:                   | AREA:               | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 6,975 SQ.FT.        |                               |
| FRONT PORCH AREA:       | 516 SQ.FT.          |                               |
|                         | 154 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                     |                               |
| DOORS / WINDOWS         |                     | 28%                           |
| VINYL (SIDING / SHAKES) |                     | 61%                           |
| STONE                   |                     | 11%                           |
| COLUMNS                 |                     | 3.6%                          |
| <b>REAR ELEVATION</b>   |                     |                               |
| DOORS / WINDOWS         |                     | 53%                           |
| VINYL (SIDING / SHAKES) |                     | 44%                           |
| STONE                   |                     | 3%                            |
| COLUMNS                 |                     | N/A                           |
| <b>LEFT ELEVATION</b>   |                     |                               |
| DOORS / WINDOWS         |                     | 17%                           |
| VINYL (SIDING / SHAKES) |                     | 83%                           |
| STONE                   |                     | 0.3%                          |
| COLUMNS                 |                     | 0.4%                          |
| <b>RIGHT ELEVATION</b>  |                     |                               |
| DOORS / WINDOWS         |                     | 4%                            |
| VINYL (SIDING / SHAKES) |                     | 80%                           |
| STONE                   |                     | 16%                           |
| COLUMNS                 |                     | 0.4%                          |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHID WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 8'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

NOTE:  
FRONT ELEVATION  
FACES DEQUINDRE ROAD



1 OVERALL FLOOR PLAN

A4.12 SCALE: 3/32" = 1'-0"

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BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

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**A4.12**

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BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

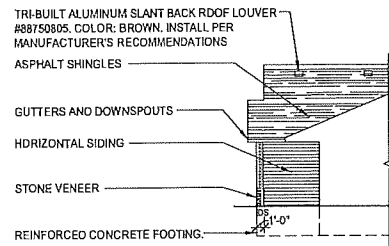
PROJECT #: 6919

REDWOOD ROCHESTER HILLS

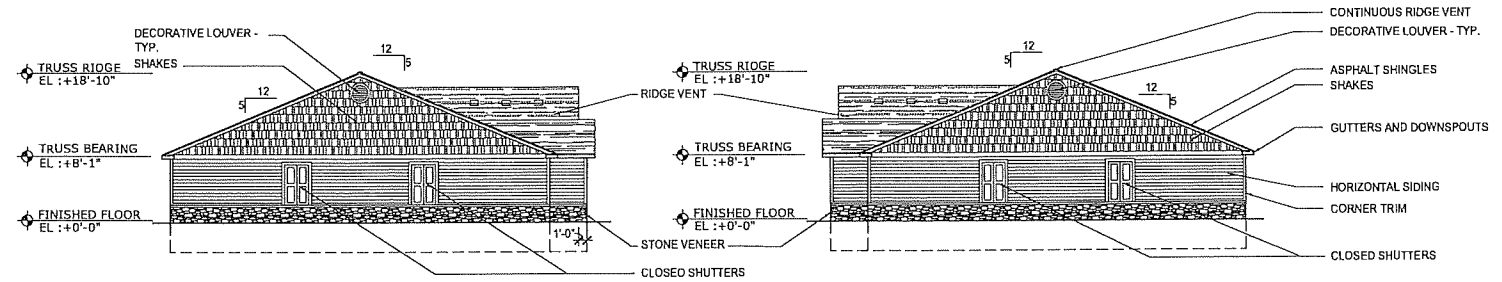
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**A4.13**  
13 OF 20



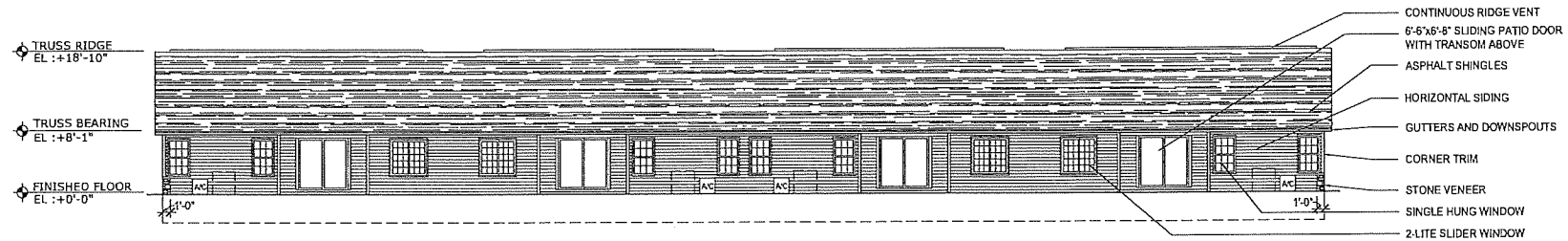
**6 PARTIAL SIDE ELEVATION**  
A4.13 SCALE: 3/32" = 1'-0"



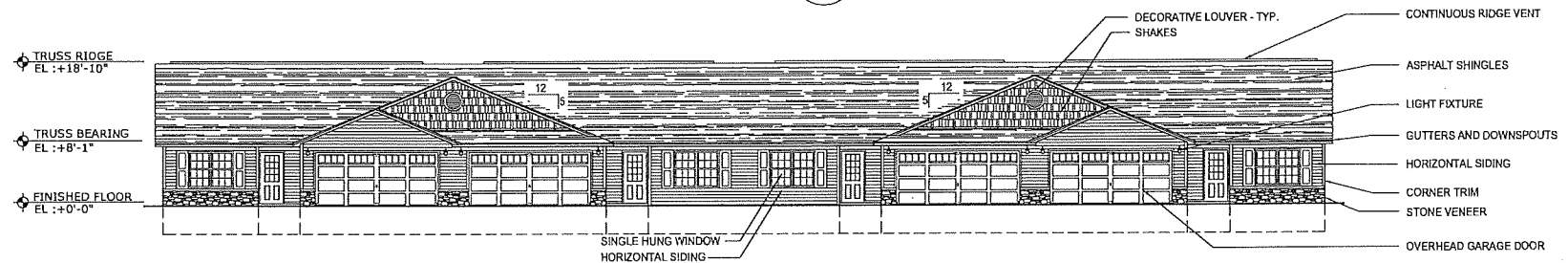
**5 HIGH PROFILE SIDE ELEVATION**  
A4.13 SCALE: 3/32" = 1'-0"

**4 HIGH PROFILE SIDE ELEVATION**  
A4.13 SCALE: 3/32" = 1'-0"

NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY



**3 REAR ELEVATION**  
A4.13 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.13 SCALE: 3/32" = 1'-0"

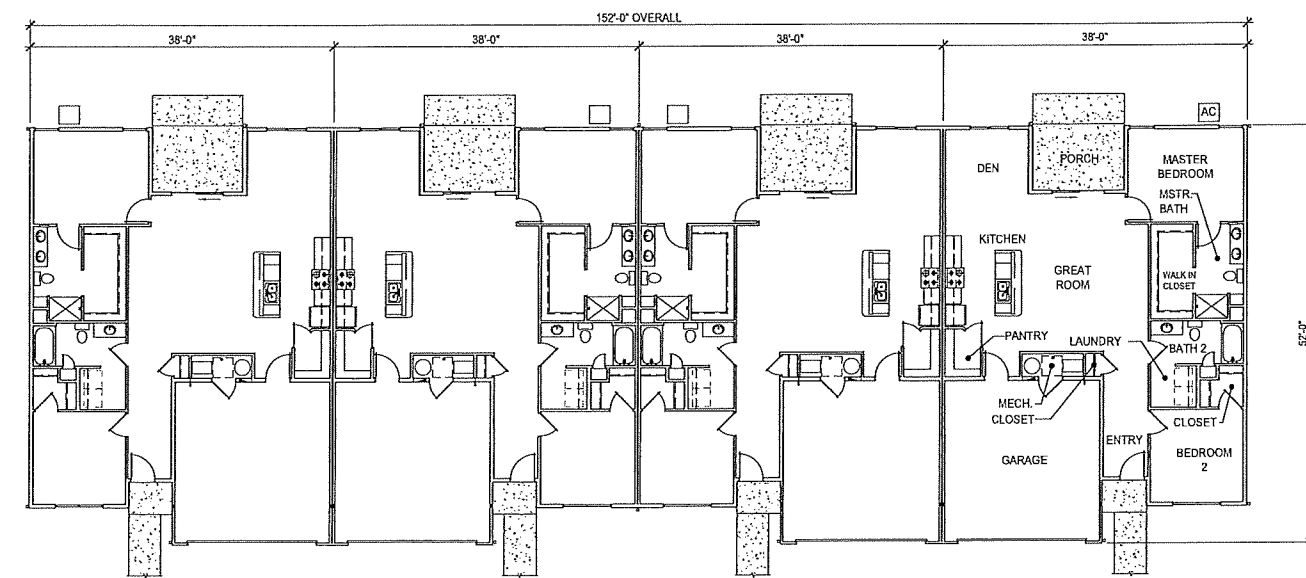
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:                           | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---------------------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 7,138 SQ.FT.                    |                               |
| FRONT PORCH AREA:       | 88 SQ.FT.<br>22 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                                 |                               |
| DOORS / WINDOWS         |                                 | 44%                           |
| VINYL (SIDING / SHAKES) |                                 | 49%                           |
| STONE                   |                                 | 7%                            |
| COLUMNS                 |                                 | N/A                           |
| <b>REAR ELEVATION</b>   |                                 |                               |
| DOORS / WINDOWS         |                                 | 33%                           |
| VINYL (SIDING / SHAKES) |                                 | 66%                           |
| STONE                   |                                 | 0.4%                          |
| COLUMNS                 |                                 | N/A                           |
| <b>LEFT ELEVATION</b>   |                                 |                               |
| DOORS / WINDOWS         |                                 | 0%                            |
| VINYL (SIDING / SHAKES) |                                 | 87%                           |
| STONE                   |                                 | 13%                           |
| COLUMNS                 |                                 | N/A                           |
| <b>RIGHT ELEVATION</b>  |                                 |                               |
| DOORS / WINDOWS         |                                 | 0%                            |
| VINYL (SIDING / SHAKES) |                                 | 87%                           |
| STONE                   |                                 | 13%                           |
| COLUMNS                 |                                 | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

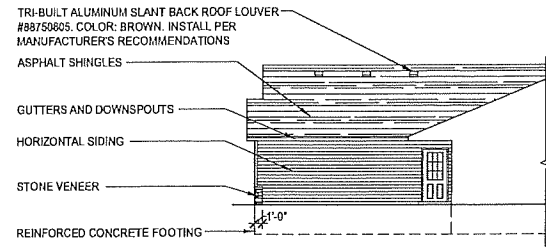
| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.



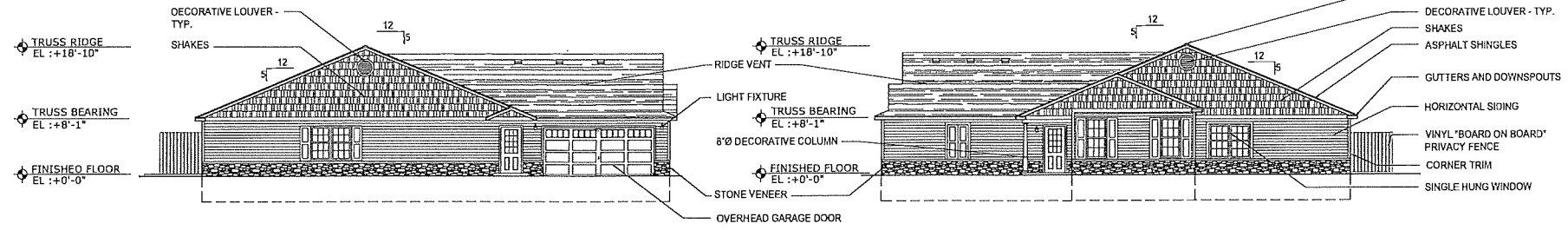
**1 OVERALL FLOOR PLAN**  
A4.13 SCALE: 3/32" = 1'-0"

BUILDINGS O, T, W, Y



6 PARTIAL SIDE ELEVATION

A4.14 SCALE: 3/32" = 1'-0"

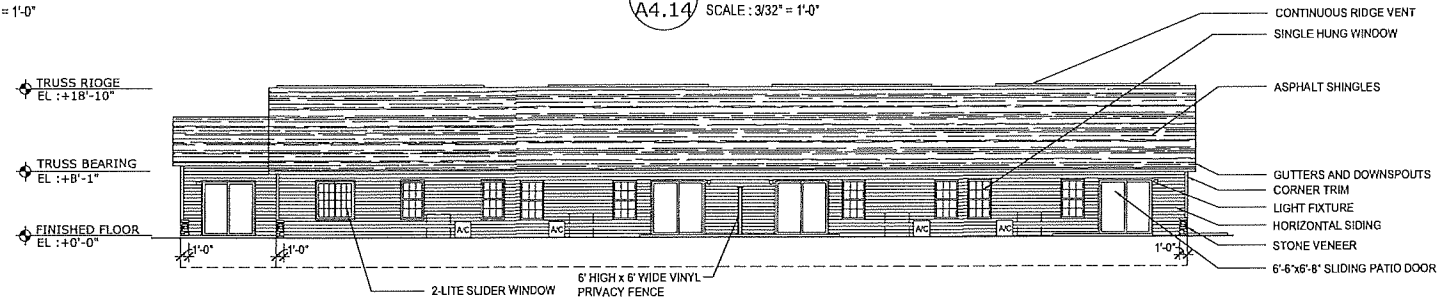


5 HIGH PROFILE SIDE ELEVATION

A4.14 SCALE: 3/32" = 1'-0"

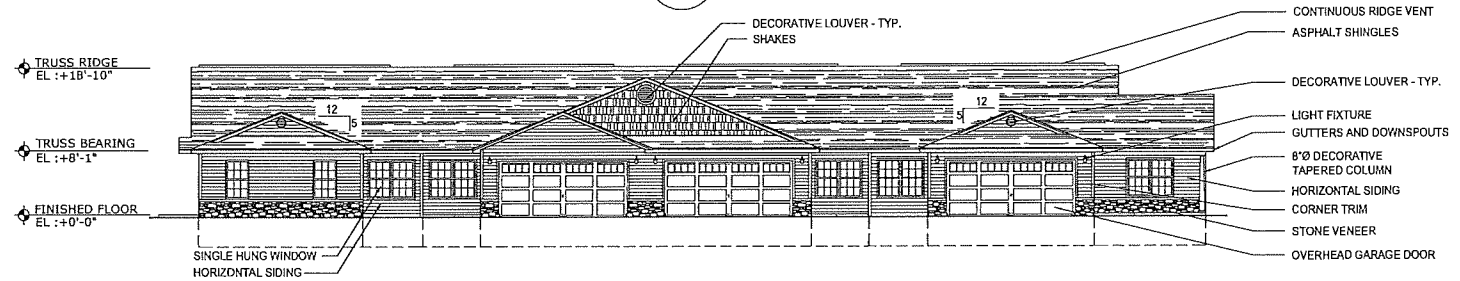
4 HIGH PROFILE SIDE ELEVATION

A4.14 SCALE: 3/32" = 1'-0"



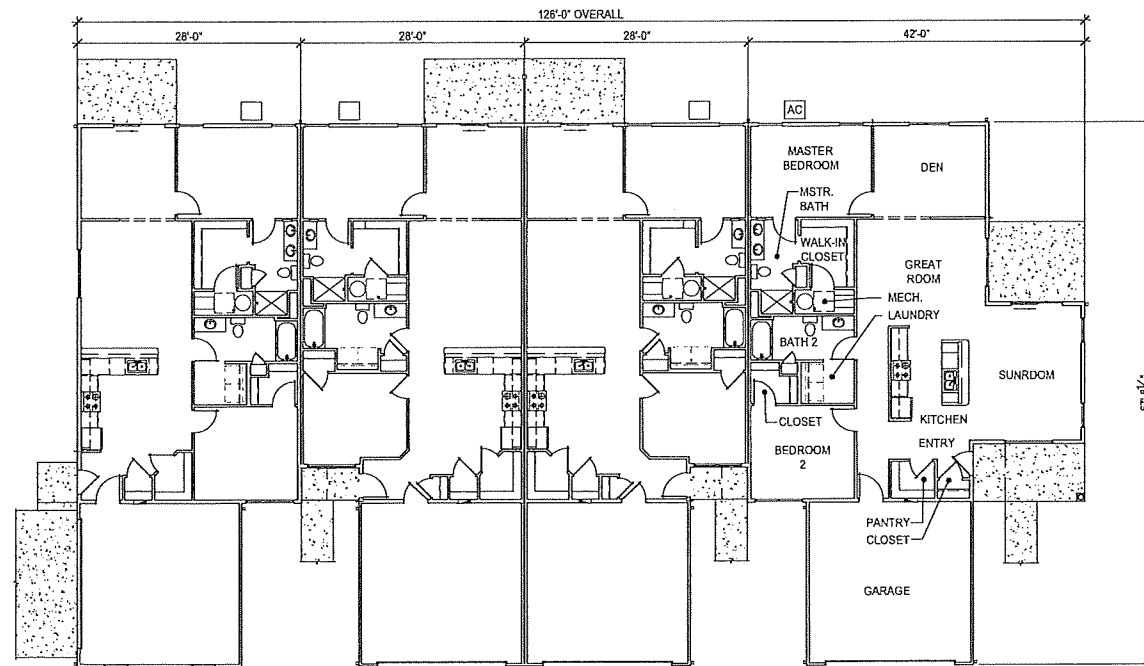
3 REAR ELEVATION

A4.14 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION

A4.14 SCALE: 3/32" = 1'-0"



1 OVERALL FLOOR PLAN

A4.14 SCALE: 3/32" = 1'-0"

BUILDING R

BUILDING EXTERIOR FINISH INFORMATION

| ITEM:                   | AREA:                                      | PERCENT OF ELEVATION COVERAGE |
|-------------------------|--|-------------------------------|
| BUILDING FLOOR AREA:    | 7,216 SQ.FT.                               |                               |
| FRONT PORCH AREA:       | 184 SQ.FT.<br>45 SQ.FT. PER UNIT (AVERAGE) |                               |
| FRONT ELEVATION         |  |                               |
| DOORS / WINDOWS         |  | 41%                           |
| VINYL (SIDING / SHAKES) |  | 50%                           |
| STONE                   |  | 9%                            |
| COLUMNS                 |  | 0.3%                          |
| REAR ELEVATION          |  |                               |
| DOORS / WINDOWS         |  | 31%                           |
| VINYL (SIDING / SHAKES) |  | 68%                           |
| STONE                   |  | 0.8%                          |
| COLUMNS                 |  | N/A                           |
| LEFT ELEVATION          |  |                               |
| DOORS / WINDOWS         |  | 21%                           |
| VINYL (SIDING / SHAKES) |  | 67%                           |
| STONE                   |  | 13%                           |
| COLUMNS                 |  | N/A                           |
| RIGHT ELEVATION         |  |                               |
| DOORS / WINDOWS         |  | 11%                           |
| VINYL (SIDING / SHAKES) |  | 71%                           |
| STONE                   |  | 18%                           |
| COLUMNS                 |  | 1%                            |

EXTERIOR FINISH MATERIAL SELECTIONS

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-5" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

PRELIMINARY

NOTE!!! THIS DRAWING IS NOT FOR CONSTRUCTION

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**MPG**  
MANN • PARSONS • GRAY  
ARCHITECTS

BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307



A4.14

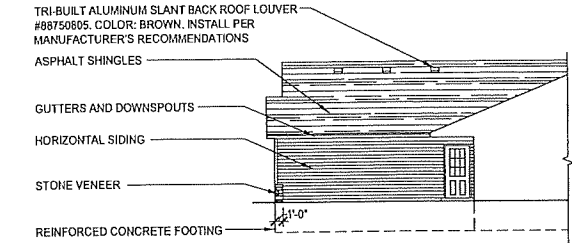
14 OF 20

REVISIONS

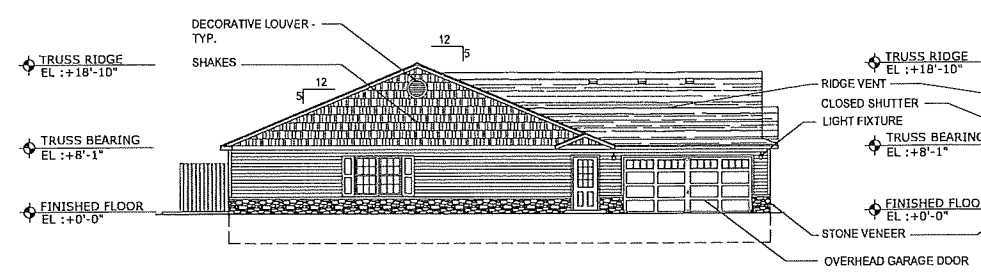
phone 330.666.5770  
fax 330.666.8812  
3660 Embassy Parkway  
Fairlawn, OH 44333



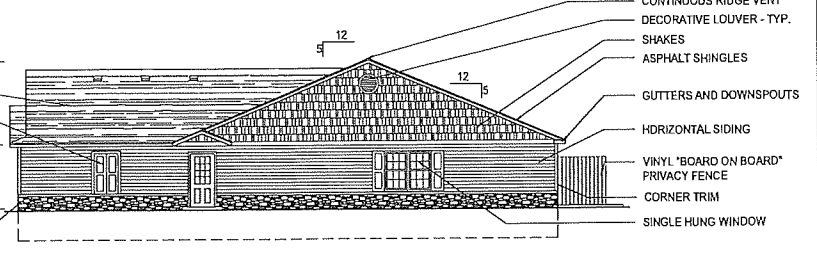
BUILDING PLAN AND ELEVATIONS  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
REDWOOD ROCHESTER HILLS  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307



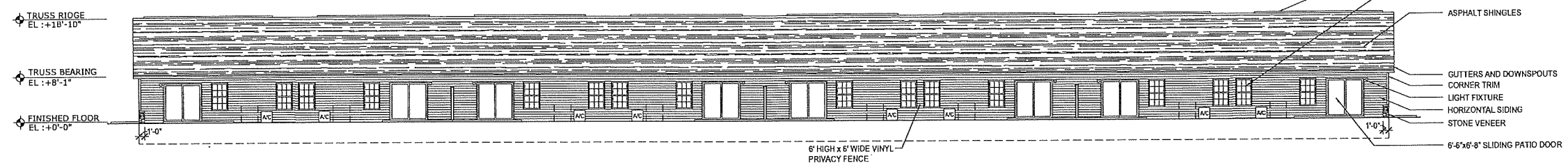
**6 PARTIAL SIDE ELEVATION**  
A4.15 SCALE: 3/32" = 1'-0"



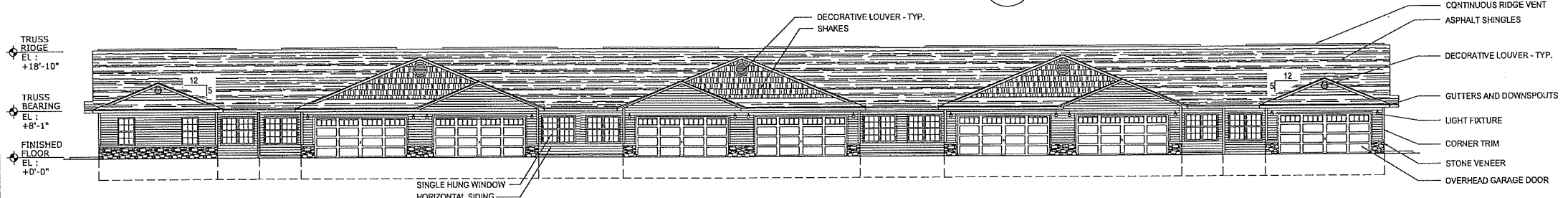
**5 HIGH PROFILE SIDE ELEVATION**  
A4.15 SCALE: 3/32" = 1'-0"



**4 HIGH PROFILE SIDE ELEVATION**  
A4.15 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.15 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.15 SCALE: 3/32" = 1'-0"

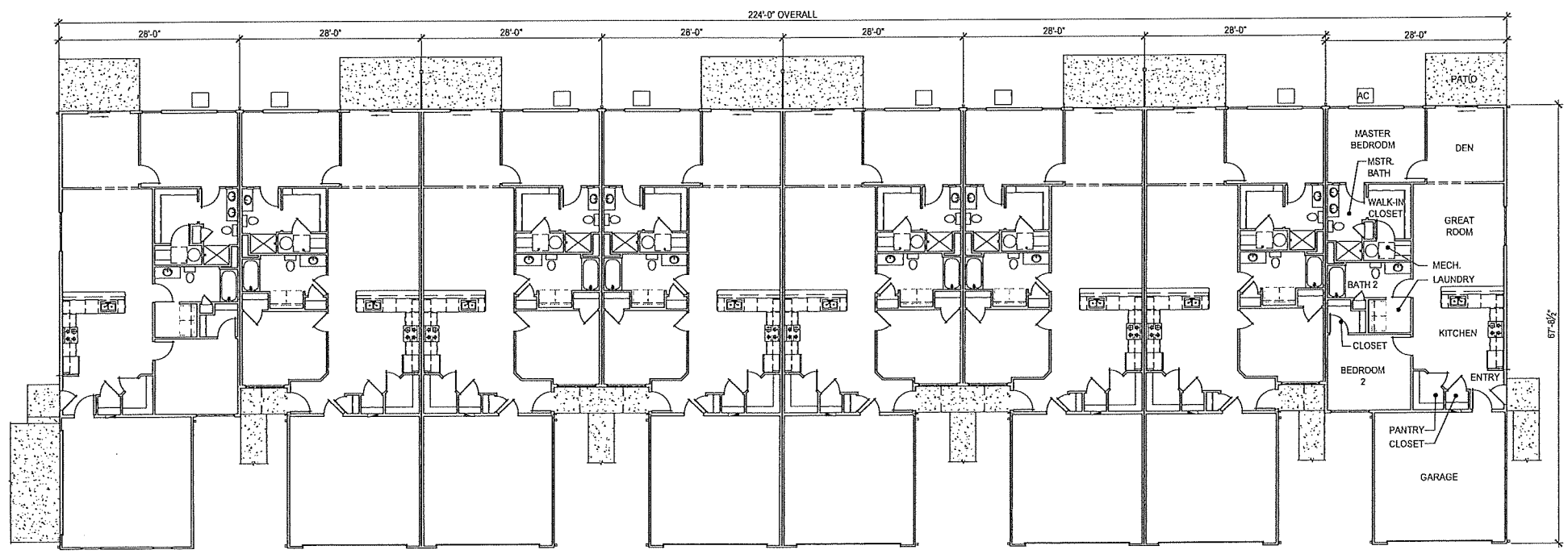
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:         | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---------------|-------------------------------|
| BUILDING FLOOR AREA:    | 13,760 SQ.FT. |                               |
| FRONT PORCH AREA:       | 225 SQ.FT.    |                               |
| FRONT ELEVATION         |               |                               |
| DOORS / WINDOWS         |               | 52%                           |
| VINYL (SIDING / SHAKES) |               | 42%                           |
| STONE                   |               | 5%                            |
| COLUMNS                 |               | N/A                           |
| REAR ELEVATION          |               |                               |
| DOORS / WINDOWS         |               | 33%                           |
| VINYL (SIDING / SHAKES) |               | 67%                           |
| STONE                   |               | 0.3%                          |
| COLUMNS                 |               | N/A                           |
| LEFT ELEVATION          |               |                               |
| DOORS / WINDOWS         |               | 21%                           |
| VINYL (SIDING / SHAKES) |               | 67%                           |
| STONE                   |               | 13%                           |
| COLUMNS                 |               | N/A                           |
| RIGHT ELEVATION         |               |                               |
| DOORS / WINDOWS         |               | 6%                            |
| VINYL (SIDING / SHAKES) |               | 75%                           |
| STONE                   |               | 19%                           |
| COLUMNS                 |               | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

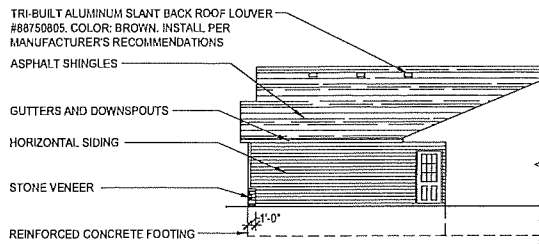
| ITEM:                         | MATERIAL / STYLE:             | COLOR:   |
|-------------------------------|-------------------------------|--|
| DECORATIVE LOUVER             | VINYL                         | WHITE  |
| ASPHALT SHINGLES              | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                 |
| GUTTERS AND DOWNSPOUTS        | PREFINISHED ALUMINUM          | WHITE  |
| HORIZONTAL SIDING             | VINYL                         | VARIES   |
| SHAKES                        | VINYL                         | VARIES   |
| CORNER TRIM                   | VINYL                         | WHITE  |
| STONE VENEER                  | PRESTIGE                      | DHID WHITE VEIN                                |
| OVERHEAD GARAGE DOOR          | RAISED PANEL PAN STEEL        | WHITE  |
| SINGLE HUNG                   | VINYL                         | STANDARD WHITE WITH COLDNAL PATTERN FLAT GRIDS |
| 6' X 6'-6" SLIDING PATIO DOOR | VINYL                         | WHITE  |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

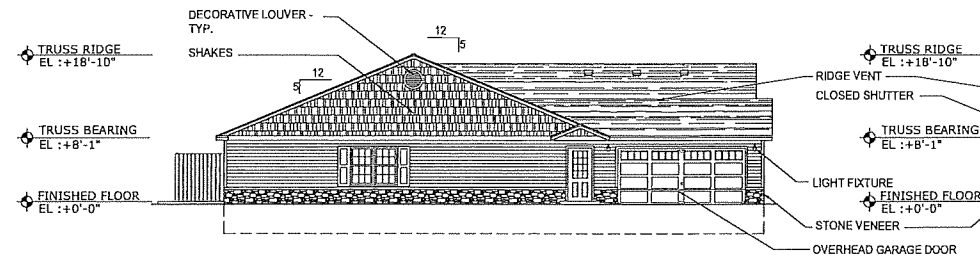


**1 OVERALL FLOOR PLAN**  
A4.15 SCALE: 3/32" = 1'-0"

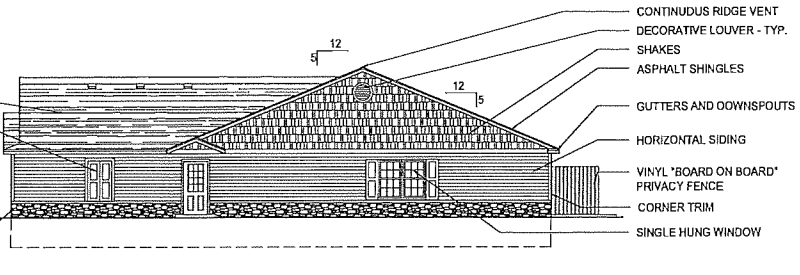
BUILDING S



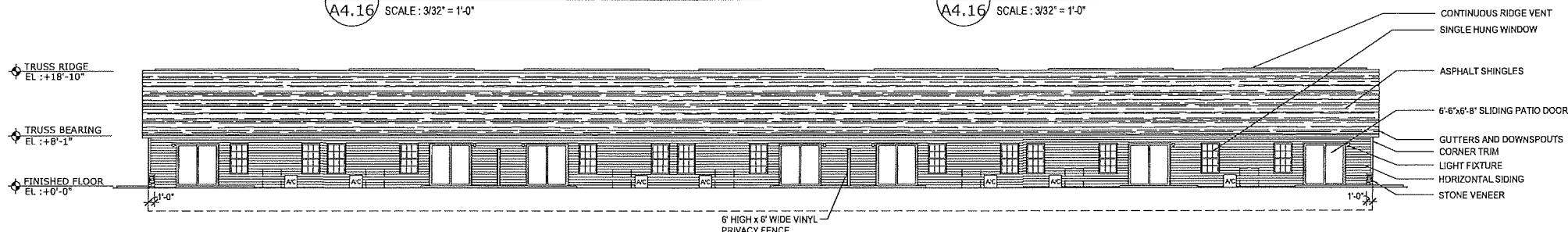
**6 PARTIAL SIDE ELEVATION**  
A4.16 SCALE: 3/32" = 1'-0"



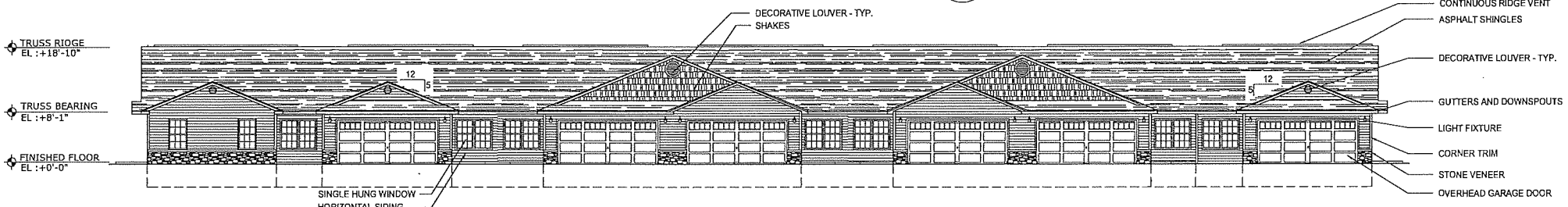
**5 HIGH PROFILE SIDE ELEVATION**  
A4.16 SCALE: 3/32" = 1'-0"



**4 HIGH PROFILE SIDE ELEVATION**  
A4.16 SCALE: 3/32" = 1'-0"



**3 REAR ELEVATION**  
A4.16 SCALE: 3/32" = 1'-0"

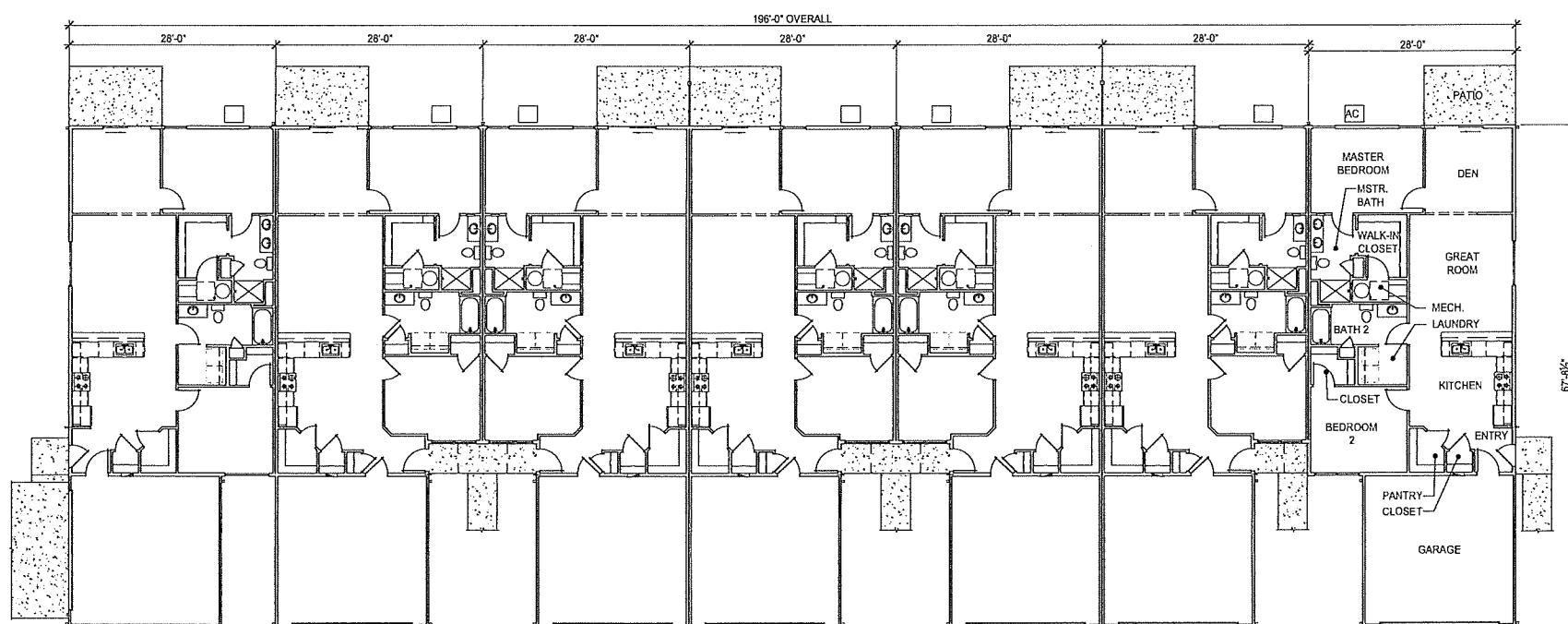


**2 FRONT ELEVATION**  
A4.16 SCALE: 3/32" = 1'-0"

| BUILDING EXTERIOR FINISH INFORMATION |                              |                               |
|--------------------------------------|------------------------------|-------------------------------|
| ITEM:                                | AREA:                        | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 12,066 SQ.FT.                |                               |
| FRONT PORCH AREA:                    | 196 SQ.FT.                   |                               |
|                                      | 28 SQ.FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>               |                              |                               |
| DOORS / WINDOWS                      |                              | 45%                           |
| VINYL (SIDING / SHAKES)              |                              | 50%                           |
| STONE                                |                              | 5%                            |
| COLUMNS                              |                              | N/A                           |
| <b>REAR ELEVATION</b>                |                              |                               |
| DOORS / WINDOWS                      |                              | 33%                           |
| VINYL (SIDING / SHAKES)              |                              | 67%                           |
| STONE                                |                              | 0.3%                          |
| COLUMNS                              |                              | N/A                           |
| <b>LEFT ELEVATION</b>                |                              |                               |
| DOORS / WINDOWS                      |                              | 21%                           |
| VINYL (SIDING / SHAKES)              |                              | 67%                           |
| STONE                                |                              | 13%                           |
| COLUMNS                              |                              | N/A                           |
| <b>RIGHT ELEVATION</b>               |                              |                               |
| DOORS / WINDOWS                      |                              | 6%                            |
| VINYL (SIDING / SHAKES)              |                              | 75%                           |
| STONE                                |                              | 18%                           |
| COLUMNS                              |                              | N/A                           |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE: ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.



**1 OVERALL FLOOR PLAN**  
A4.16 SCALE: 3/32" = 1'-0" BUILDING U

**PRELIMINARY**  
NOTE!!! THIS DRAWING IS NOT FOR CONSTRUCTION

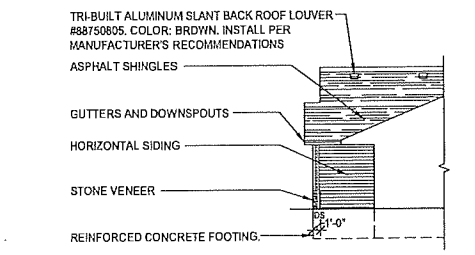
REVISIONS

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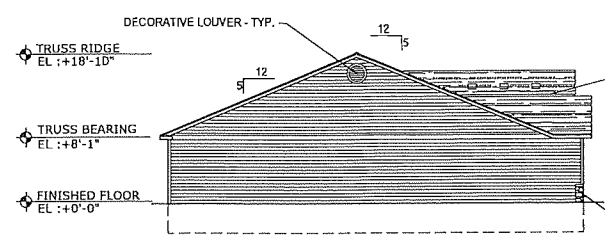
**MPG ARCHITECTS**  
MANN - PARSONS - GRAY

**BUILDING PLAN AND ELEVATIONS**  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
**REDWOOD ROCHESTER HILLS**  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

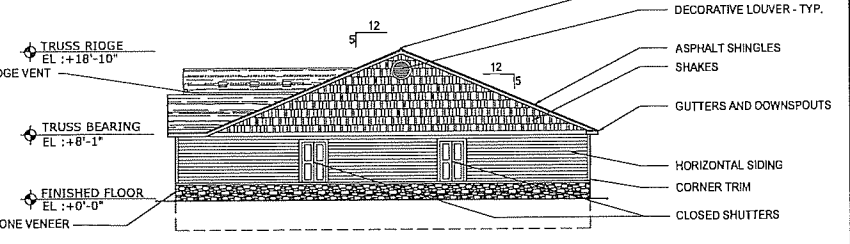
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**6 PARTIAL SIDE ELEVATION**  
A4.17 SCALE: 3/32" = 1'-0"

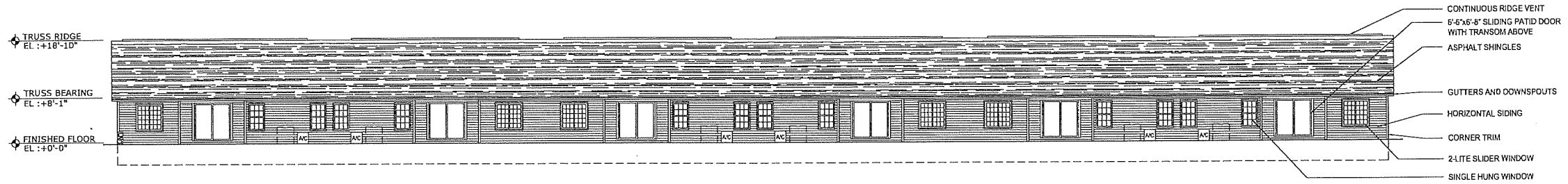


**5 STANDARD SIDE ELEVATION**  
A4.17 SCALE: 3/32" = 1'-0"

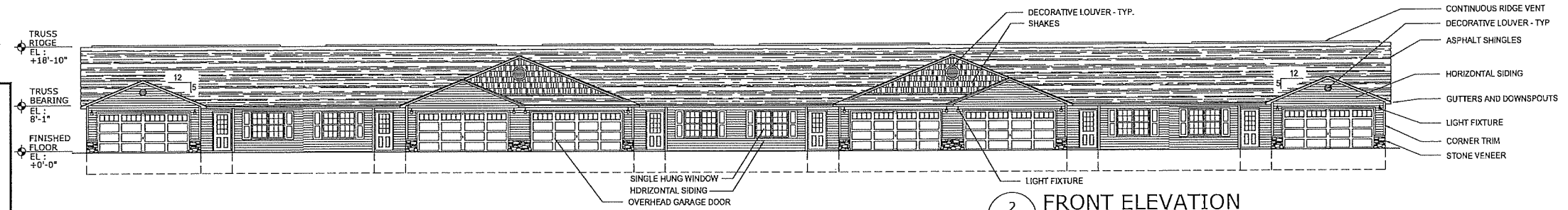


**4 HIGH PROFILE SIDE ELEVATION**  
A4.17 SCALE: 3/32" = 1'-0"

NOTE:  
HIGH PROFILE SIDE  
ELEVATION OCCURS AT  
STREET VIEW ONLY



**3 REAR ELEVATION**  
A4.17 SCALE: 3/32" = 1'-0"



**2 FRONT ELEVATION**  
A4.17 SCALE: 3/32" = 1'-0"

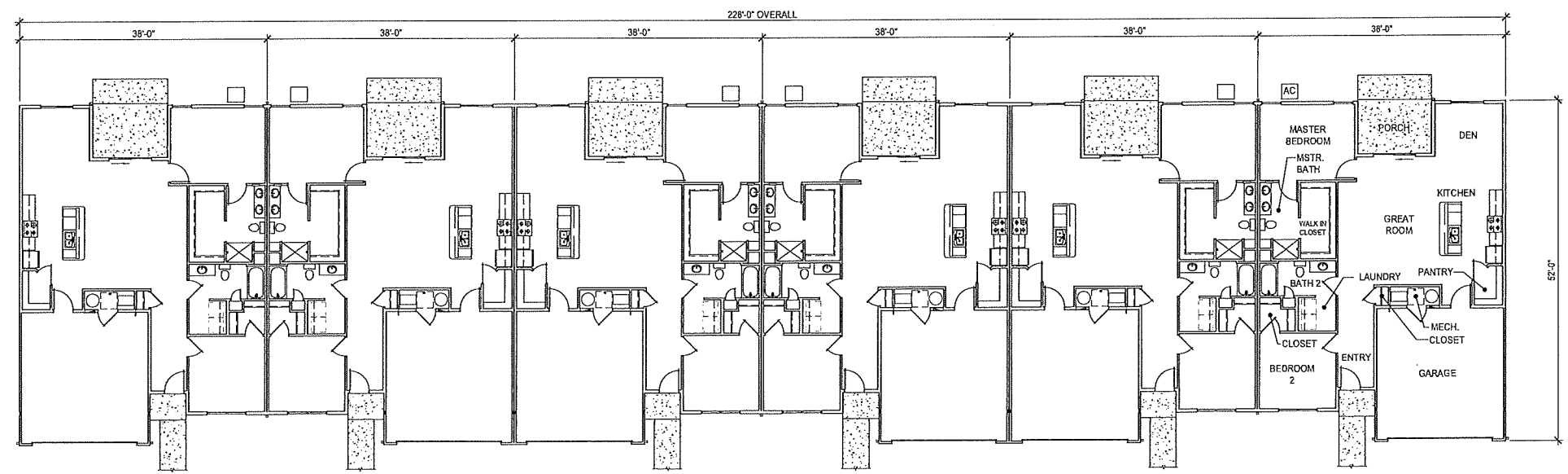
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:              | PERCENT OF ELEVATION COVERAGE |
|-------------------------|--------------------|-------------------------------|
| BUILDING FLOOR AREA:    | 10,706 SQ.FT.      |                               |
| FRONT PORCH AREA:       | 132 SQ.FT.         |                               |
|                         | 22 SQ.FT. PER UNIT |                               |
| <b>FRONT ELEVATION</b>  |                    |                               |
| DOORS / WINDOWS         |                    | 46%                           |
| VINYL (SIDING / SHAKES) |                    | 52%                           |
| STONE                   |                    | 2%                            |
| COLUMNS                 |                    | N/A                           |
| <b>REAR ELEVATION</b>   |                    |                               |
| DOORS / WINDOWS         |                    | 33%                           |
| VINYL (SIDING / SHAKES) |                    | 67%                           |
| STONE                   |                    | 0.1%                          |
| COLUMNS                 |                    | N/A                           |
| <b>LEFT ELEVATION</b>   |                    |                               |
| DOORS / WINDOWS         |                    | 0%                            |
| VINYL (SIDING / SHAKES) |                    | 99.7%                         |
| STONE                   |                    | 0.3%                          |
| COLUMNS                 |                    | N/A                           |
| <b>RIGHT ELEVATION</b>  |                    |                               |
| DOORS / WINDOWS         |                    | 0%                            |
| VINYL (SIDING / SHAKES) |                    | 87%                           |
| STONE                   |                    | 13%                           |
| COLUMNS                 |                    | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-5" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

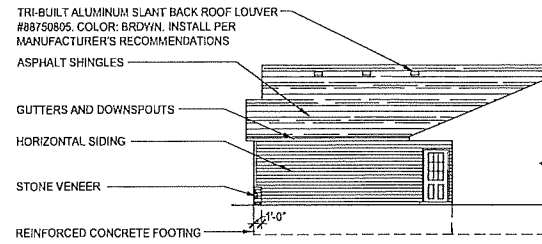


**1 OVERALL FLOOR PLAN**  
A4.17 SCALE: 3/32" = 1'-0"

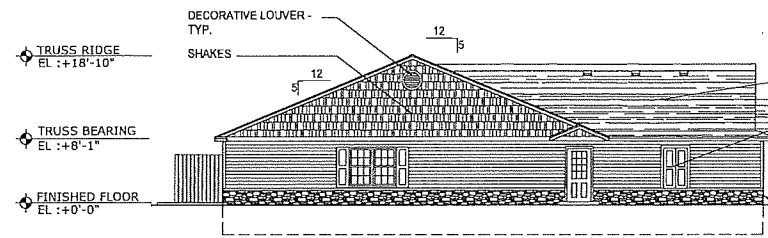
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Fairlawn, OH 44333  
mpg-architects.com



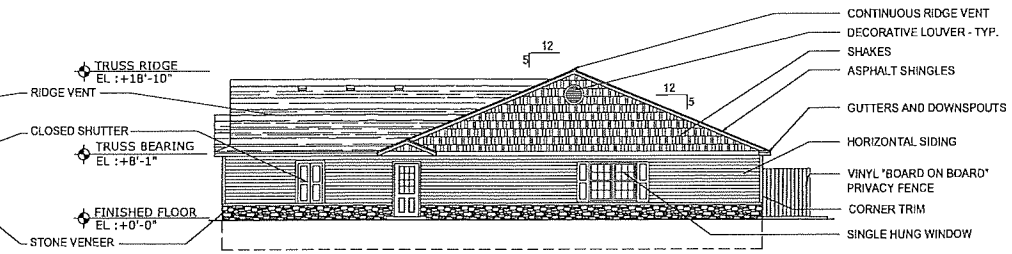
**BUILDING PLAN AND ELEVATIONS**  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
**REDWOOD ROCHESTER HILLS**  
E. AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307



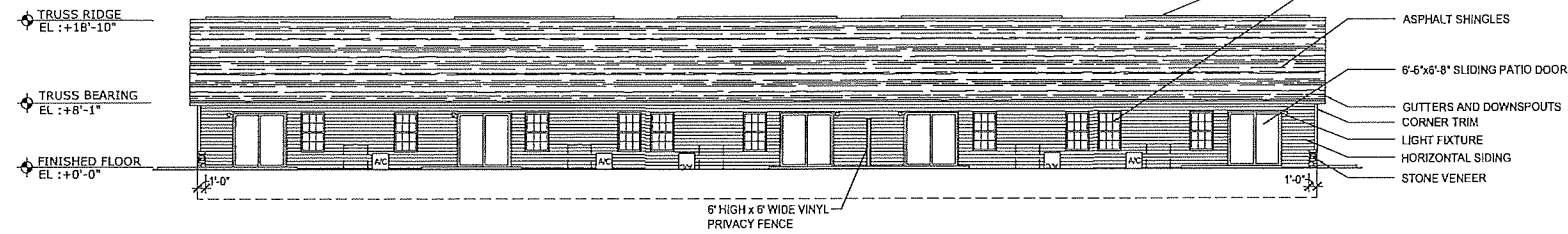
6 PARTIAL SIDE ELEVATION  
A4.18 SCALE: 3/32" = 1'-0"



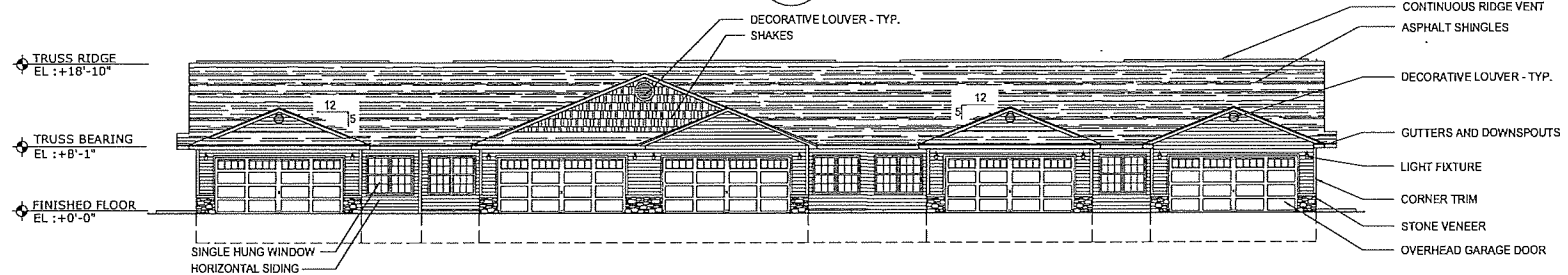
5 HIGH PROFILE SIDE ELEVATION  
A4.18 SCALE: 3/32" = 1'-0"



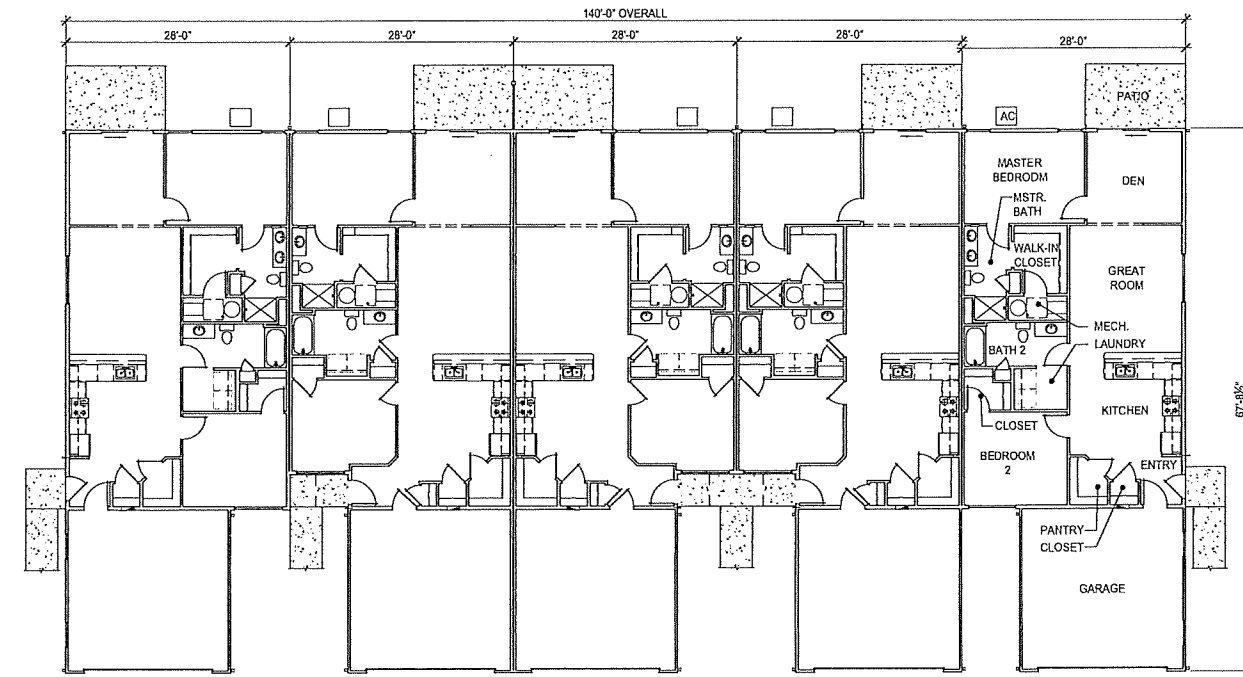
4 HIGH PROFILE SIDE ELEVATION  
A4.18 SCALE: 3/32" = 1'-0"



3 REAR ELEVATION  
A4.18 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION  
A4.18 SCALE: 3/32" = 1'-0"



1 OVERALL FLOOR PLAN  
A4.18 SCALE: 3/32" = 1'-0"

| BUILDING EXTERIOR FINISH INFORMATION |                              |                               |
|--------------------------------------|------------------------------|-------------------------------|
| ITEM:                                | AREA:                        | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 8,637 SQ.FT.                 |                               |
| FRONT PORCH AREA:                    | 135 SQ.FT.                   |                               |
|                                      | 27 SQ.FT. PER UNIT (AVERAGE) |                               |
| FRONT ELEVATION                      |                              |                               |
| DOORS / WINDOWS                      |                              | 53%                           |
| VINYL (SIDING / SHAKES)              |                              | 42%                           |
| STONE                                |                              | 4%                            |
| COLUMNS                              |                              | N/A                           |
| REAR ELEVATION                       |                              |                               |
| DOORS / WINDOWS                      |                              | 33%                           |
| VINYL (SIDING / SHAKES)              |                              | 67%                           |
| STONE                                |                              | 0.7%                          |
| COLUMNS                              |                              | N/A                           |
| LEFT ELEVATION                       |                              |                               |
| DOORS / WINDOWS                      |                              | 6%                            |
| VINYL (SIDING / SHAKES)              |                              | 75%                           |
| STONE                                |                              | 18%                           |
| COLUMNS                              |                              | N/A                           |
| RIGHT ELEVATION                      |                              |                               |
| DOORS / WINDOWS                      |                              | 6%                            |
| VINYL (SIDING / SHAKES)              |                              | 75%                           |
| STONE                                |                              | 18%                           |
| COLUMNS                              |                              | N/A                           |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN-FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.

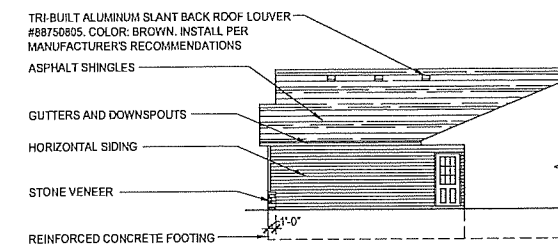
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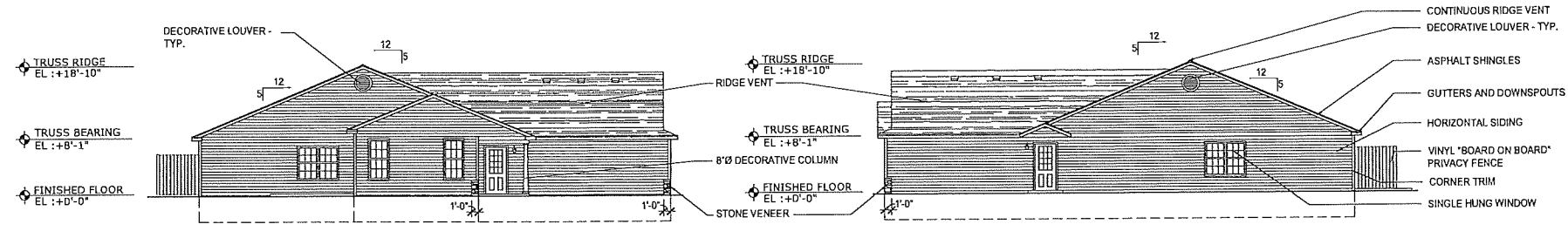
BUILDING PLAN AND ELEVATIONS  
PROJECT #: 6919  
DATE: AUGUST 27, 2019  
REDWOOD ROCHESTER HILLS  
E AVON ROAD  
ROCHESTER HILLS, MICHIGAN  
48307

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6 PARTIAL SIDE ELEVATION

A4.19 SCALE: 3/32" = 1'-0"

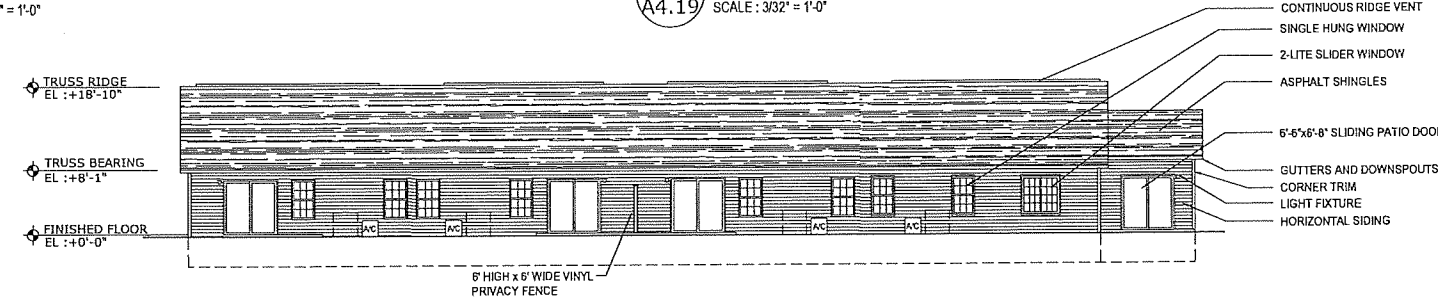


5 STANDARD SIDE ELEVATION

A4.19 SCALE: 3/32" = 1'-0"

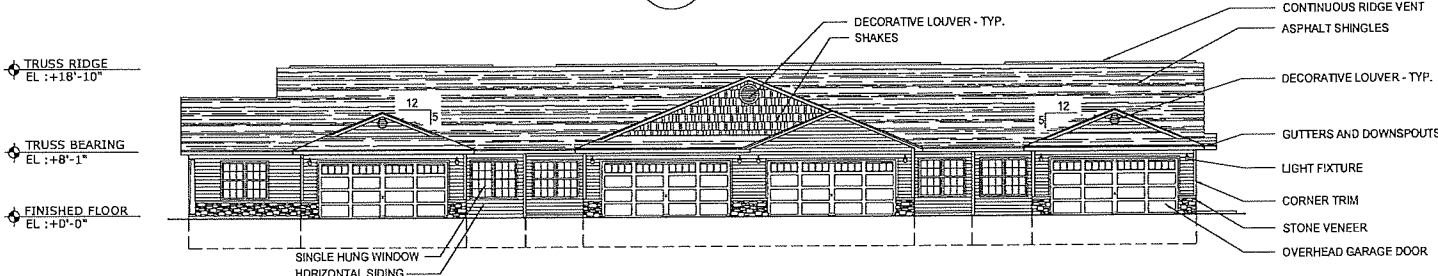
4 STANDARD SIDE ELEVATION

A4.19 SCALE: 3/32" = 1'-0"



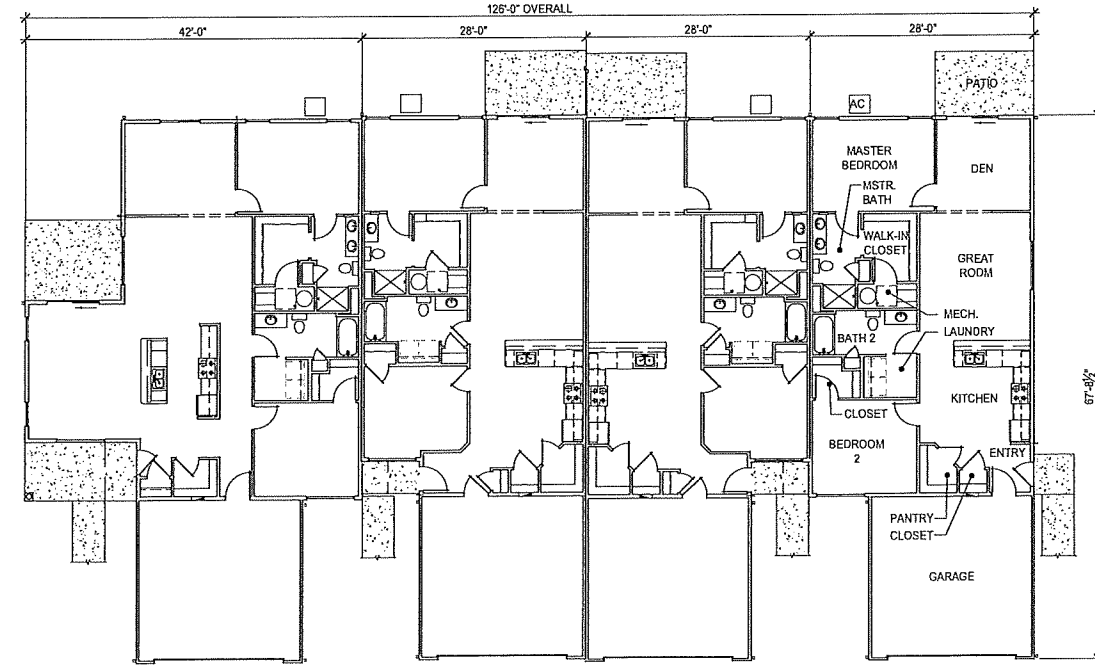
3 REAR ELEVATION

A4.19 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION

A4.19 SCALE: 3/32" = 1'-0"



1 OVERALL FLOOR PLAN

A4.19 SCALE: 3/32" = 1'-0"

BUILDINGS Z

| BUILDING EXTERIOR FINISH INFORMATION |  |                               |
|--------------------------------------|--|-------------------------------|
| ITEM:                                | AREA:                                      | PERCENT OF ELEVATION COVERAGE |
| BUILDING FLOOR AREA:                 | 7,216 SQ.FT.                               |                               |
| FRONT PORCH AREA:                    | 184 SQ.FT.<br>46 SQ.FT. PER UNIT (AVERAGE) |                               |
| FRONT ELEVATION                      |  |                               |
| DOORS / WINDOWS                      |  | 48%                           |
| VINYL (SIDING / SHAKES)              |  | 46%                           |
| STONE                                |  | 6%                            |
| COLUMNS                              |  | 0.3%                          |
| REAR ELEVATION                       |  |                               |
| DOORS / WINDOWS                      |  | 31%                           |
| VINYL (SIDING / SHAKES)              |  | 68%                           |
| STONE                                |  | 0.3%                          |
| COLUMNS                              |  | N/A                           |
| LEFT ELEVATION                       |  |                               |
| DOORS / WINDOWS                      |  | 11%                           |
| VINYL (SIDING / SHAKES)              |  | 88%                           |
| STONE                                |  | 1%                            |
| COLUMNS                              |  | 1%                            |
| RIGHT ELEVATION                      |  |                               |
| DOORS / WINDOWS                      |  | 6%                            |
| VINYL (SIDING / SHAKES)              |  | 93%                           |
| STONE                                |  | 0.3%                          |
| COLUMNS                              |  | N/A                           |

| EXTERIOR FINISH MATERIAL SELECTIONS |                               |   |
|-------------------------------------|-------------------------------|---|
| ITEM:                               | MATERIAL / STYLE:             | COLOR:  |
| DECORATIVE LOUVER                   | VINYL                         | WHITE   |
| ASPHALT SHINGLES                    | DIRECTIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS              | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                   | VINYL                         | VARIES  |
| SHAKES                              | VINYL                         | VARIES  |
| CORNER TRIM                         | VINYL                         | WHITE   |
| STONE VENEER                        | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR                | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                         | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" x 6'-8" SLIDING PATIO DOOR    | VINYL                         | WHITE   |

NOTE:  
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fax 330.666.8812

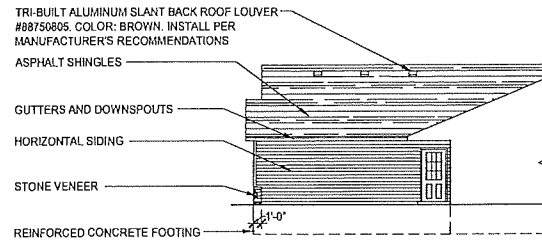
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DATE: AUGUST 27, 2019

PROJECT #: 6919

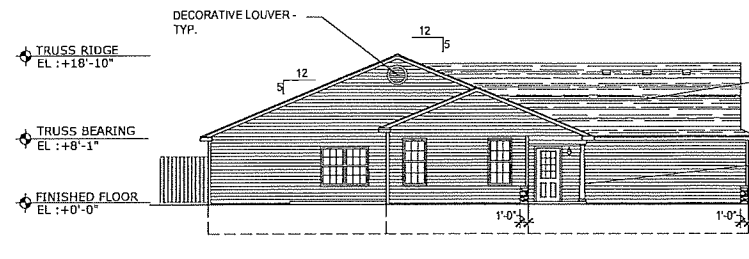
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ROCHESTER HILLS, MICHIGAN  
48307



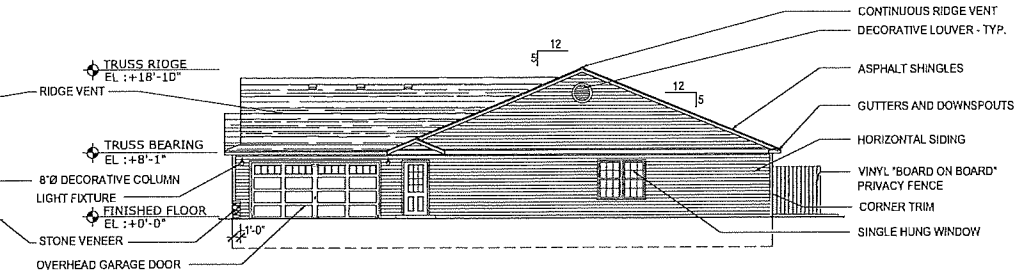
6 PARTIAL SIDE ELEVATION

A4.20 SCALE: 3/32" = 1'-0"



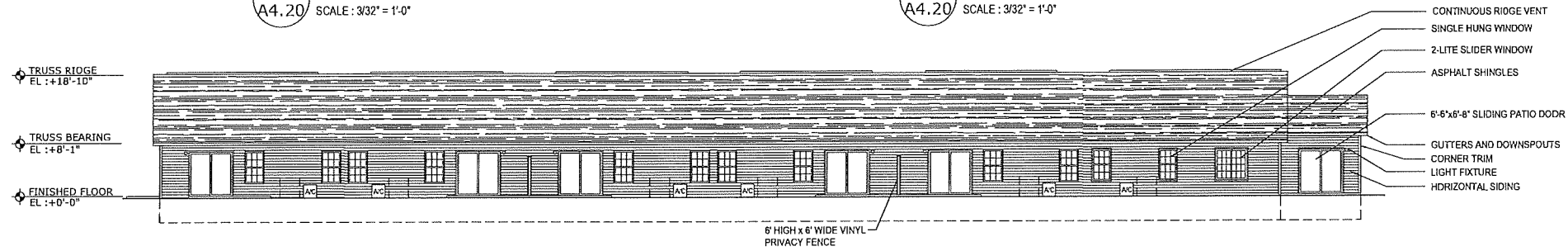
5 STANDARD SIDE ELEVATION

A4.20 SCALE: 3/32" = 1'-0"



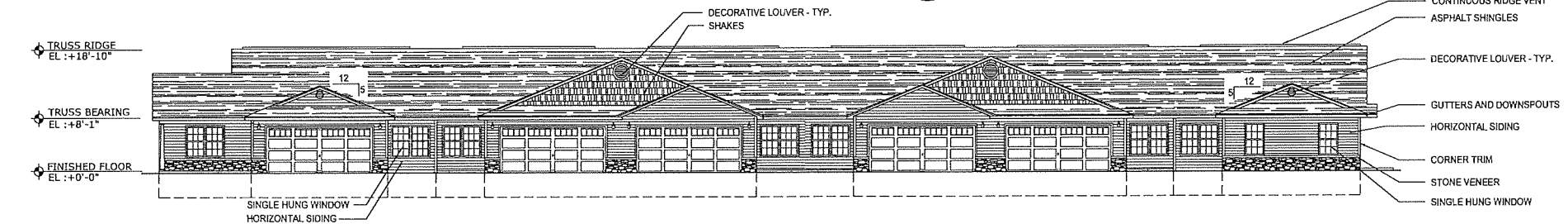
4 STANDARD SIDE ELEVATION

A4.20 SCALE: 3/32" = 1'-0"



3 REAR ELEVATION

A4.20 SCALE: 3/32" = 1'-0"



2 FRONT ELEVATION

A4.20 SCALE: 3/32" = 1'-0"

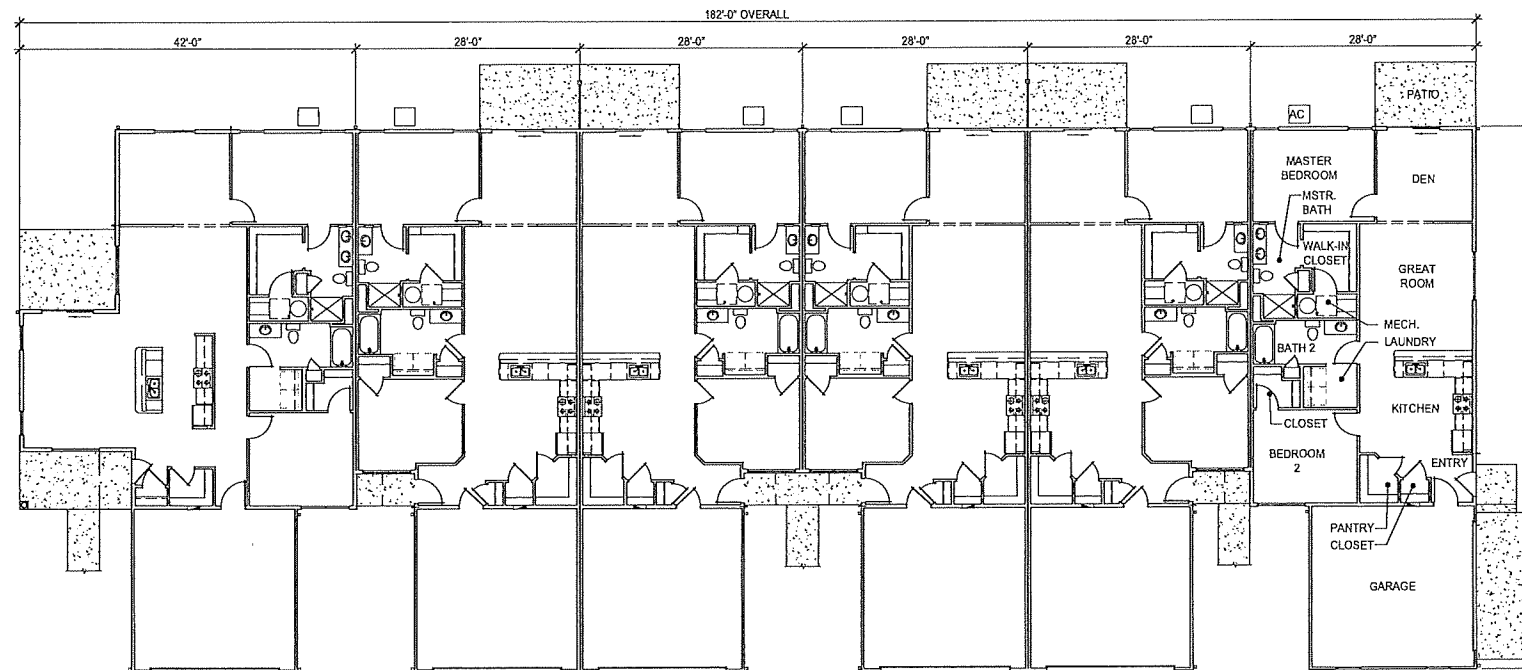
**BUILDING EXTERIOR FINISH INFORMATION**

| ITEM:                   | AREA:   | PERCENT OF ELEVATION COVERAGE |
|-------------------------|---|-------------------------------|
| BUILDING FLOOR AREA:    | 10,843 SQ.FT.                                 |                               |
| FRONT PORCH AREA:       | 243 SQ.FT.<br>40.47 SQ.FT. PER UNIT (AVERAGE) |                               |
| <b>FRONT ELEVATION</b>  |   |                               |
| DOORS / WINDOWS         |   | 42%                           |
| VINYL (SIDING / SHAKES) |   | 52%                           |
| STONE                   |   | 5%                            |
| COLUMNS                 |   | 0.2%                          |
| <b>REAR ELEVATION</b>   |   |                               |
| DOORS / WINDOWS         |   | 32%                           |
| VINYL (SIDING / SHAKES) |   | 68%                           |
| STONE                   |   | 0%                            |
| COLUMNS                 |   | N/A                           |
| <b>LEFT ELEVATION</b>   |   |                               |
| DOORS / WINDOWS         |   | 11%                           |
| VINYL (SIDING / SHAKES) |   | 88%                           |
| STONE                   |   | 1%                            |
| COLUMNS                 |   | 1%                            |
| <b>RIGHT ELEVATION</b>  |   |                               |
| DOORS / WINDOWS         |   | 21%                           |
| VINYL (SIDING / SHAKES) |   | 79%                           |
| STONE                   |   | 0.3%                          |
| COLUMNS                 |   | N/A                           |

**EXTERIOR FINISH MATERIAL SELECTIONS**

| ITEM:                            | MATERIAL / STYLE:             | COLOR:  |
|----------------------------------|-------------------------------|---|
| DECORATIVE LOUVER                | VINYL                         | WHITE   |
| ASPHALT SHINGLES                 | DIMENSIONAL 30 YEAR LAMINATED | WEATHERED WOOD                                  |
| GUTTERS AND DOWNSPOUTS           | PREFINISHED ALUMINUM          | WHITE   |
| HORIZONTAL SIDING                | VINYL                         | VARIES  |
| SHAKES                           | VINYL                         | VARIES  |
| CORNER TRIM                      | VINYL                         | WHITE   |
| STONE VENEER                     | PRESTIGE                      | OHIO WHITE VEIN                                 |
| OVERHEAD GARAGE DOOR             | RAISED PANEL PAN STEEL        | WHITE   |
| SINGLE HUNG                      | VINYL                         | STANDARD WHITE WITH COLONIAL PATTERN FLAT GRIDS |
| 6'-6" X 6'-8" SLIDING PATIO DOOR | VINYL                         | WHITE   |

NOTE:  
ADDRESS FOR EACH UNIT TO BE PLACED IN SUCH A POSITION AS TO BE PLAINLY VISIBLE AND LEGIBLE FROM THE STREET OR ROAD.



1 OVERALL FLOOR PLAN

A4.20 SCALE: 3/32" = 1'-0"

BUILDING AA

**PRELIMINARY**

**NOTE!!!**  
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BUILDING PLAN AND ELEVATIONS

DATE: AUGUST 27, 2019

PROJECT #: 6919

REDWOOD ROCHESTER HILLS

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48307

**A4.20**

20 OF 20



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DATE: AUGUST 27, 2019

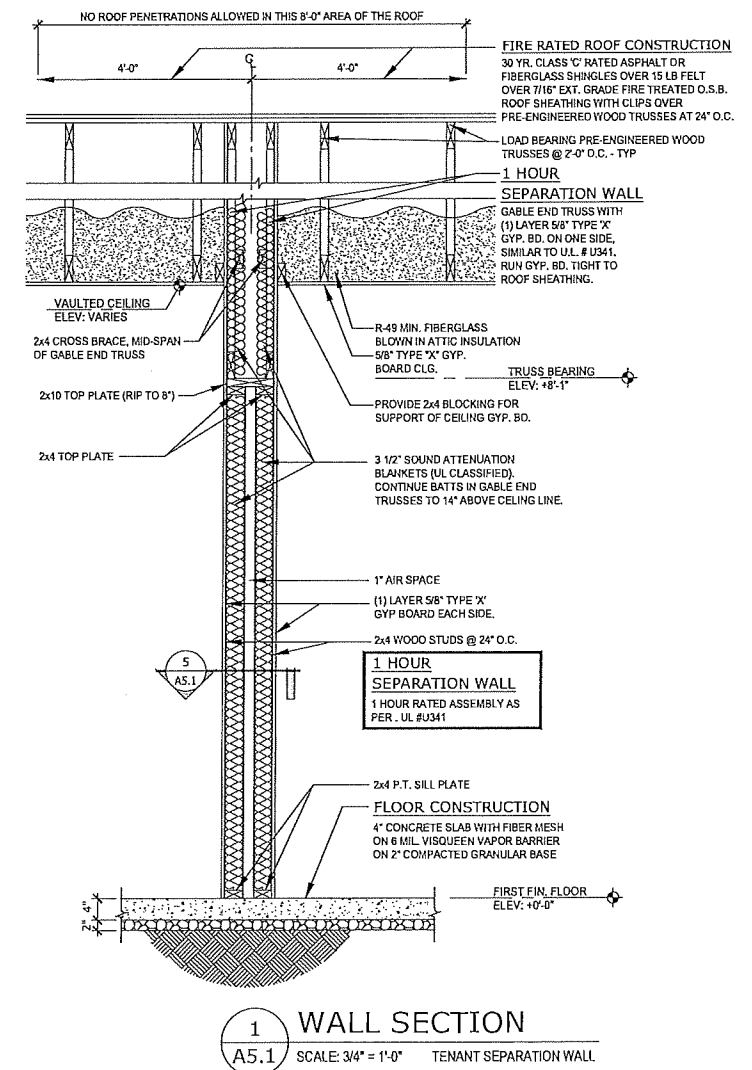
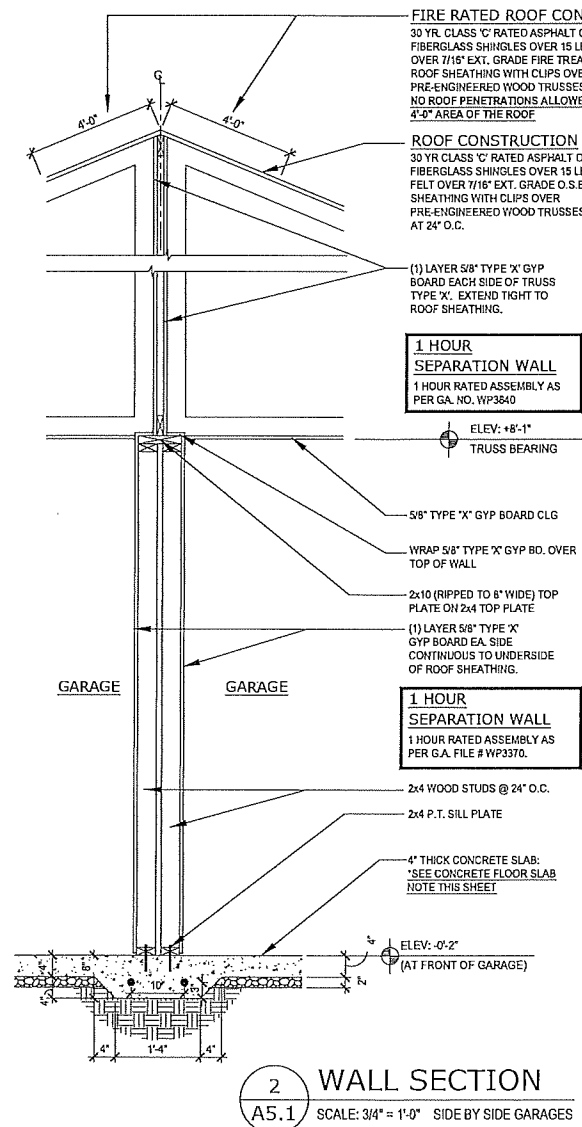
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ROCHESTER HILLS, MICHIGAN  
48307


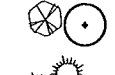

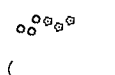
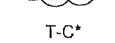

WALL SECTIONS

PROJECT #: 6919

**A5.1**  
1 OF 1



**LEGEND**

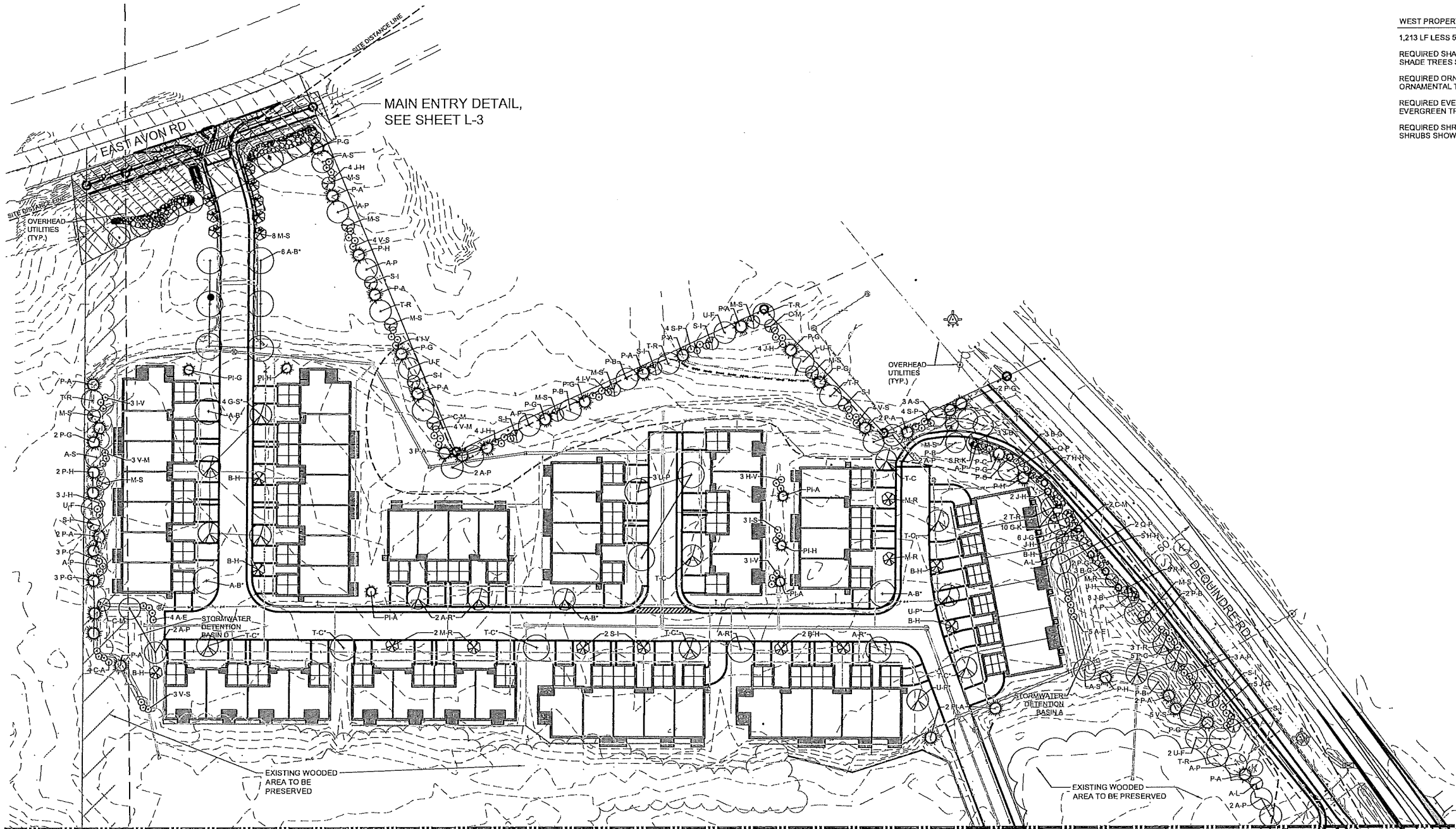
-  SHADE TREES - 3" CALIPER FOR ROW, BUFFERS AND STORMWATER REQUIREMENTS, 2-1/2" CALIPER FOR ALL OTHERS  
PACIFIC SUNSET MAPLE, LEGACY SUGAR MAPLE, LONDON PLANE TREE, VALLEY FORGE ELM, LINDEN
-  ORNAMENTAL TREES - 2" CALIPER or 6'  
CRABAPPLES, MAGNOLIA, TREE LILAC, RIVER BIRCH
-  EVERGREEN TREES - 10' HT. FOR ROW, BUFFERS AND STORMWATER REQUIREMENTS, 6' HT. FOR ALL OTHERS  
GREEN SPRUCE, SERBIAN SPRUCE, DOUGLAS FIR, NORWAY SPRUCE
-  SHRUBS - LARGE 30" FOR BUFFER & SMALL 3 GAL  
DENSI YEW, VIBURNUM, BURNING BUSH, WINTERBERRY, JUNIPER, SPIRAEA, DOGWOOD, LILAC
-  GRASSES/PERENNIALS - 1 GAL  
DAYLILY, MAIDEN GRASS, FEATHER REED GRASS, BLACK-EYED SUSAN
-  EXISTING WOODED AREAS
- T-C\* \* DENOTES 45 REPLACEMENT TREE LOCATIONS

**NOTES:**

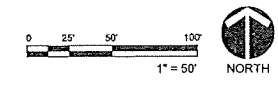
1. A LANDFORM BUFFER, 3' HT., 2' CROWN, 3:1 SLOPES MAX. WILL BE INSTALLED WHERE THERE IS NO CONFLICT WITH STORMWATER BASINS, OR TREES TO REMAIN. GRADES WILL BE COORDINATED WITH ENGINEER'S GRADING PLAN.
2. ALL FENCES SHALL HAVE FINISHED APPEARANCES ON BOTH SIDES. ALL LANDSCAPE FENCING SHALL BE WHITE.
3. AREAS ADJACENT TO STRUCTURES WILL BE SODDED. REMAINING AREAS WILL BE SEEDED WITH A FIVE-WAY BLEND OF FESCUE
4. ALL LANDSCAPED AREAS WILL BE IRRIGATED. A FULL IRRIGATION PLAN WILL BE PROVIDED FOR REVIEW. WATERING WILL ONLY OCCUR BETWEEN THE HOURS OF 12AM AND 5AM SHOULD BE INCLUDED ON THE PLANS. IRRIGATION OVERSPRAY SHALL NOT BROADCAST ONTO THE CITY PATHWAY.
5. PRIOR TO THE RELEASE OF THE PERFORMANCE BOND, THE CITY OF ROCHESTER HILLS MUST INSPECT ALL LANDSCAPE PLANTINGS.
6. THE LANDSCAPING PROVIDED WILL MEET OR EXCEED ORDINANCE REQUIREMENTS.

**LANDSCAPE REQUIREMENTS**

|  |   |  |   |
|--|---|--|---|
| <b>RIGHT OF WAY - EAST AVON RD</b>                               |   | <b>RIGHT OF WAY - DEQUINDRE RD</b>                     |   |
| 224 LF LESS 30 LF FOR DRIVE = 194 LF                             |   | 1,090 LF LESS 30 LF FOR DRIVE = 1,020 LF               |   |
| REQUIRED TREES @ 1/35 LF . . . . . 6 TREES                       | TREES SHOWN . . . . . 6 TREES             | REQUIRED TREES @ 1/35 LF . . . . . 31 TREES            | TREES SHOWN . . . . . 31 TREES            |
| REQUIRED ORNAMENTAL TREES @ 1/60 LF . . . . . 4 TREES            | ORNAMENTAL TREES SHOWN . . . . . 4 TREES  | REQUIRED ORNAMENTAL TREES @ 1/60 LF . . . . . 17 TREES | ORNAMENTAL TREES SHOWN . . . . . 19 TREES |
| <b>NORTH PROPERTY LINE BUFFER B</b>                              |   | <b>STORMWATER BASIN A</b>                              |   |
| 978 LF - PROPERTY LINE LENGTH                                    |   | 490 LF PERIMETER                                       |   |
| REQUIRED SHADE TREES @ 2/100 LF . . . . . 20 TREES               | SHADE TREES SHOWN . . . . . 20 TREES      | REQUIRED TREES @ 1.5'/100 LF . . . . . 8 TREES         | TREES SHOWN . . . . . 8 TREES             |
| REQUIRED ORNAMENTAL TREES @ 1.5'/100 LF . . . . . 15 TREES       | ORNAMENTAL TREES SHOWN . . . . . 16 TREES | REQUIRED EVERGREEN @ 1/100 LF . . . . . 5 TREES        | TREES SHOWN . . . . . 5 TREES             |
| REQUIRED EVERGREEN TREES @ 2/100 LF . . . . . 20 TREES           | EVERGREEN TREES SHOWN . . . . . 20 TREES  | REQUIRED SHRUBS @ 4/100 LF . . . . . 20 SHRUBS         | SHRUBS SHOWN . . . . . 20 SHRUBS          |
| REQUIRED SHRUBS @ 4/100 LF . . . . . 40 SHRUBS                   | SHRUBS SHOWN . . . . . 40 SHRUBS          |  |   |
| <b>WEST PROPERTY LINE BUFFER C</b>                               |   | <b>STORMWATER BASIN D</b>                              |   |
| 1,213 LF LESS 573 EXISTING TREES = 640 LF - PROPERTY LINE LENGTH |   | 275 LF PERIMETER                                       |   |
| REQUIRED SHADE TREES @ 2/100 LF . . . . . 13 TREES               | SHADE TREES SHOWN . . . . . 13 TREES      | REQUIRED TREES @ 1.5'/100 LF . . . . . 4 TREES         | TREES SHOWN . . . . . 4 TREES             |
| REQUIRED ORNAMENTAL TREES @ 1.5'/100 LF . . . . . 10 TREES       | ORNAMENTAL TREES SHOWN . . . . . 10 TREES | REQUIRED EVERGREEN @ 1/100 LF . . . . . 3 TREES        | TREES SHOWN . . . . . 3 TREES             |
| REQUIRED EVERGREEN TREES @ 4/100 LF . . . . . 26 TREES           | EVERGREEN TREES SHOWN . . . . . 26 TREES  | REQUIRED SHRUBS @ 4/100 LF . . . . . 11 SHRUBS         | SHRUBS SHOWN . . . . . 11 SHRUBS          |
| REQUIRED SHRUBS @ 6/100 LF . . . . . 38 SHRUBS                   | SHRUBS SHOWN . . . . . 38 SHRUBS          |  |   |



**SITE LANDSCAPE PLAN** MATCHLINE



your trusted advisor  
engineers  
architects  
planners  
**consultants**

| DATE     | REVISION       | NO | ISSUED FOR: | PRELIM SET | ISSUE DATE: | SCALE:   | DESIGNED BY: | DRAWN BY: | CHECKED BY: |
|----------|----------------|----|-------------|------------|-------------|----------|--------------|-----------|-------------|
| 07/11/19 | TYP COMMENTS   | 1  |             |            | 04/7/19     | AS SHOWN | RW           | RW        | CC          |
| 07/09/19 | REV. SITE PLAN | 2  |             |            |             |          |              |           |             |
| 06/27/19 | PC SUBMITTAL   | 3  |             |            |             |          |              |           |             |

**ROCHESTER HILLS**  
EAST AVON RD, ROCHESTER HILLS, OAKLAND COUNTY, MI  
REDWOOD - 7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OH 44131

**SITE LANDSCAPE PLAN - NORTH**

|             |           |
|-------------|-----------|
| PROJECT NO. | 190346    |
| DISCIPLINE  | LANDSCAPE |
| SHEET NAME  | L-1       |
| SHEET       | 1         |
| OF          | 6         |

OVERALL SITE PLANT MATERIAL LIST

| QTY. | KEY  | BOTANICAL NAME                     | COMMON NAME                    | SIZE        | NOTES           |
|------|------|------------------------------------|--------------------------------|-------------|-----------------|
| 21   | A-B  | ACER X F. 'AUTUMN BLAZE'           | AUTUMN BLAZE MAPLE             | 2-1/2" CAL. | B&B             |
| 16   | A-S  | ACER S. 'LEGACY'                   | LEGACY SUGAR MAPLE             | 3" CAL.     | B&B             |
| 30   | A-P  | ACER R. 'PACIFIC SUNSET'           | PACIFIC SUNSET MAPLE           | 3" CAL.     | B&B             |
| 8    | A-R  | ACER RUBRUM 'RED SUNSET'           | RED SUNSET MAPLE               | 2-1/2" CAL. | B&B             |
| 16   | A-G  | ACER P. 'PRINCETON GOLD'           | PRINCETON GOLD MAPLE           | 2-1/2" CAL. | B&B             |
| 28   | A-L  | AMELACHIER LAEVIS                  | ALLEGHENY SERVICEBERRY         | 2" CAL.     | B&B             |
| 8    | A-E  | ARONIA MELANOCARPA 'ELATA'         | GLOSSY BLACK CHOKECHERRY       | 3"          | B&B             |
| 15   | B-H  | BETULA NIGRA 'HERITAGE'            | HERITAGE RIVER BIRCH           | 8-10' HT    | B&B, MULTI-STEM |
| 15   | B-G  | BUXUS 'GREEN VELVET'               | GREEN VELVET BOXWOOD           | 15"         | CONT.           |
| 35   | C-K  | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER REED GRASS       | #1 CONT.    | CLUMP           |
| 18   | C-A  | CORNUS AMOMUM                      | SILKY DOGWOOD                  | 30"         | B&B             |
| 15   | C-M  | CORNUS KOUSA 'MILKY WAY'           | MILKY WAY DOGWOOD              | 8"          | B&B, CLUMP      |
| 17   | G-S  | GLEDITSEA I 'SKYLINE'              | SKYLINE HONEYLOCUST            | 2-1/2" CAL. | B&B             |
| 22   | H-V  | HAMMAMELIS VERNALIS                | VERNAL WITCHHAZEL              | 36"         | B&B             |
| 32   | H-H  | HEMEROCALLIS 'HAPPY RETURNS'       | HAPPY RETURNS DAYLILY          | #1 CONT.    | CLUMP           |
| 37   | I-V  | ILEX VERTICILLATA                  | WINTERBERRY                    | 30"         | B&B             |
| 16   | I-S  | ILEX V. 'SOUTHERN GENTLEMAN'       | SOUTHERN GENTLEMAN WINTERBERRY | 30"         | B&B             |
| 18   | J-B  | JUNIPERUS S. 'BROADMOOR'           | BROADMOOR JUNIPER              | 15"         | B&B             |
| 39   | J-H  | JUNIPERUS CH. 'HETZ GLAUCA'        | HETZ BLUE JUNIPER              | 30"         | B&B             |
| 29   | J-G  | JUNIPERUS CH. 'OLD GOLD'           | OLD GOLD JUNIPER               | 18"         | B&B             |
| 46   | M-S  | MALUS 'SPRING SNOW'                | SPRING SNOW CRABAPPLE          | 2" CAL.     | B&B, FRUITLESS  |
| 14   | M-R  | MAGNOLIA S. 'ROYAL STAR'           | ROYAL STAR MAGNOLIA            | 8" HT       | B&B             |
| 43   | P-A  | PICEA ABIES                        | NORWAY SPRUCE                  | 10' HT      | B&B             |
| 10   | PI-A | PICEA ABIES                        | NORWAY SPRUCE                  | 6" HT       | B&B             |
| 29   | P-G  | PICEA GLAUCA                       | WHITE SPRUCE                   | 10' HT      | B&B             |
| 10   | PI-G | PICEA GLAUCA                       | WHITE SPRUCE                   | 6" HT       | B&B             |
| 20   | P-H  | PINUS HELDREICHII                  | BOSNIAN PINE                   | 10' HT      | B&B             |
| 7    | PI-H | PINUS HELDREICHII                  | BOSNIAN PINE                   | 6" HT       | B&B             |
| 16   | P-B  | PLATANUS X ACERFOLIA 'BLOODGOOD'   | BLOODGOOD LONDON SYCAMORE      | 3" CAL.     | B&B             |
| 19   | P-C  | PRUNUS X CISTENA                   | PURPLELEAF SAND CHERRY         | 30"         | B&B             |
| 35   | R-K  | ROSA KNOCKOUT                      | KNOCKOUT ROSE                  | 15"         | CONT.           |
| 15   | S-P  | SYRINGA PATULA 'MISS KIM'          | MISS KIM LILAC                 | 30"         | B&B             |
| 22   | S-I  | SYRINGA R 'IVORY SILK'             | IVORY SILK LILAC               | 2" CAL.     | B&B             |
| 6    | Q-P  | QUERCUS PALUSTRIS                  | PIN OAK                        | 2-1/2" CAL. | B&B             |
| 15   | T-C  | TILIA CORDATA 'GREENSPIRE'         | GREENSPIRE LINDEN              | 2-1/2" CAL. | B&B             |
| 19   | T-R  | TILIA A. 'REDMOND'                 | REDMOND LINDEN                 | 3" CAL.     | B&B             |
| 10   | U-P  | ULMUS 'PRINCETON'                  | PRINCETON AMERICAN ELM         | 2-1/2" CAL. | B&B             |
| 14   | U-F  | ULMUS 'VALLEY FORGE'               | VALLEY FORGE AMERICAN ELM      | 3" CAL.     | B&B             |
| 45   | V-S  | VIBURNUM P.T. 'SHASTA'             | SHASTA DOUBLEFILE VIBURNUM     | 30"         | B&B             |
| 13   | V-M  | VIBURNUM P.T. 'MARIESI'            | MARIES DOUBLEFILE VIBURNUM     | 30"         | B&B             |

LANDSCAPE REQUIREMENTS

**SOUTH PROPERTY LINE BUFFER C**

1,317 LF LESS 687 EXISTING TREES = 630 LF - PROPERTY LINE LENGTH

REQUIRED SHADE TREES @ 2/100 LF. . . . . 13 TREES  
SHADE TREES SHOWN. . . . . 13 TREES

REQUIRED ORNAMENTAL TREES @ 1.5/100 LF. . . . . 10 TREES  
ORNAMENTAL TREES SHOWN. . . . . 10 TREES

REQUIRED EVERGREEN TREES @ 4/100 LF. . . . . 26 TREES  
EVERGREEN TREES SHOWN. . . . . 26 TREES

REQUIRED SHRUBS @ 6/100 LF. . . . . 38 SHRUBS  
SHRUBS SHOWN. . . . . 38 SHRUBS

**STORMWATER BASIN B**

490 LF PERIMETER

REQUIRED TREES @ 1.5/100 LF. . . . . 8 TREES  
TREES SHOWN. . . . . 8 TREES

REQUIRED EVERGREEN @ 1/100 LF. . . . . 5 TREES  
TREES SHOWN. . . . . 5 TREES

REQUIRED SHRUBS @ 4/100 LF. . . . . 20 SHRUBS  
SHRUBS SHOWN. . . . . 20 TREES

**STORMWATER BASIN E**

220 LF PERIMETER

REQUIRED TREES @ 1.5/100 LF. . . . . 3 TREES  
TREES SHOWN. . . . . 3 TREES

REQUIRED EVERGREEN @ 1/100 LF. . . . . 2 TREES  
TREES SHOWN. . . . . 2 TREES

REQUIRED SHRUBS @ 4/100 LF. . . . . 8 SHRUBS  
SHRUBS SHOWN. . . . . 8 TREES

LEGEND

SHADE TREES - 3" CALIPER FOR ROW, BUFFERS AND STORMWATER REQUIREMENTS, 2-1/2" CALIPER FOR ALL OTHERS  
PACIFIC SUNSET MAPLE, LEGACY SUGAR MAPLE, LONDON PLANE TREE, VALLEY FORGE ELM, LINDEN

ORNAMENTAL TREES - 2" CALIPER or 6"  
CRABAPPLES, MAGNOLIA, TREE LILAC, RIVER BIRCH

EVERGREEN TREES - 10' HT. FOR ROW, BUFFERS AND STORMWATER REQUIREMENTS, 8' HT. FOR ALL OTHERS  
GREEN SPRUCE, SERBIAN SPRUCE, DOUGLAS FIR, NORWAY SPRUCE

SHRUBS - LARGE 30" FOR BUFFER & SMALL 3 GAL DENSI YEW, VIBURNUM, BURNING BUSH, WINTERBERRY, JUNIPER, SPIRAEA, DOGWOOD, LILAC

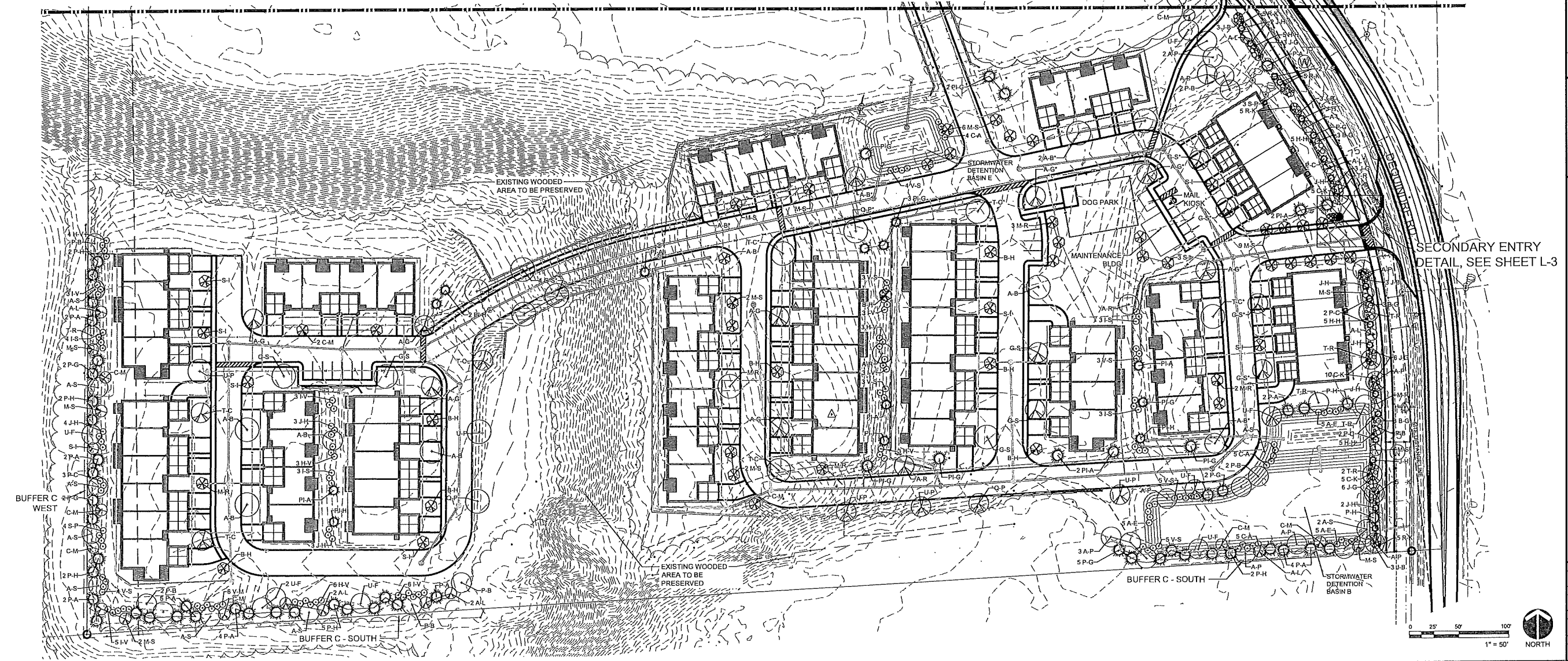
GRASSES/PERENNIALS - 1 GAL  
DAYLILY, MAIDEN GRASS, FEATHER REED GRASS, BLACK-EYED SUSAN

EXISTING WOODED AREAS

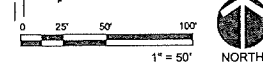
T-C \* DENOTES 45 REPLACEMENT TREE LOCATIONS



MATCHLINE



SECONDARY ENTRY  
DETAIL, SEE SHEET L-3



**Richard Washington**  
Professional Engineer  
License No. 1700  
Expires 07/31/2020

your trusted advisor

**your trusted advisor**  
consultants

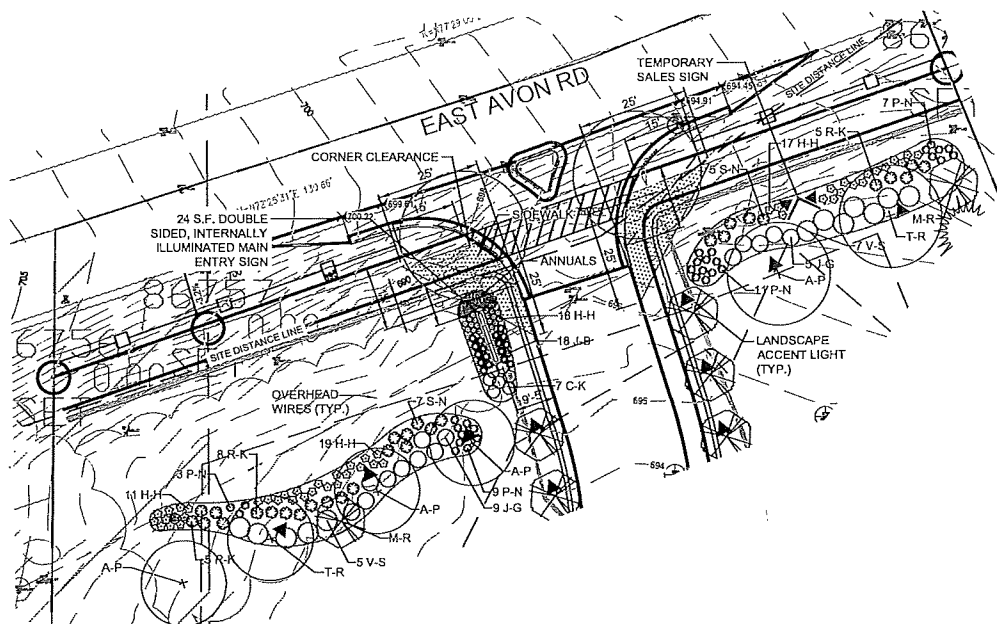
engineers  
architects  
planners

| ISSUED FOR:  | PHELM SET | NO. | DATE     | REVISION       |
|--------------|-----------|-----|----------|----------------|
| ISSUE DATE:  | 08/07/19  | 1   | 08/07/19 | TWP COMMENTS   |
| SCALE:       | 1" = 40'  | 2   | 07/09/19 | REV. SITE PLAN |
| DESIGNED BY: | RW        | 3   | 08/27/19 | PG SUBMITTAL   |
| DRAWN BY:    | RW        |     |          |                |
| CHECKED BY:  | CC        |     |          |                |

**ROCHESTER HILLS**  
EAST AVON RD, ROCHESTER HILLS, OAKLAND COUNTY, MI  
REDWOOD - 7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OH 44131

**SITE LANDSCAPE PLAN - SOUTH**

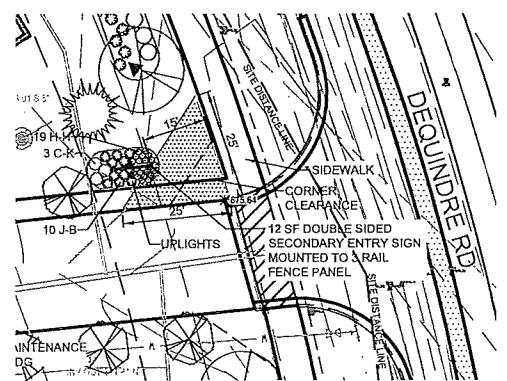
|             |           |
|-------------|-----------|
| PROJECT NO. | 190346    |
| DISCIPLINE  | LANDSCAPE |
| SHEET NAME  | L-2       |
| SHEET       | 2         |
| OF          | 6         |



**MAIN ENTRY PLANT MATERIAL LIST**

| QTY. | KEY | BOTANICAL NAME                     | COMMON NAME                | SIZE     | NOTES          |
|------|-----|------------------------------------|----------------------------|----------|----------------|
| 4    | A-P | ACER RUBRUM 'RED SUNSET'           | RED SUNSET MAPLE           | 3" CAL.  | B&B            |
| 7    | C-K | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER REED GRASS   | #1 CONT. | CLUMP          |
| 65   | H-H | HEMEROCALLIS 'HAPPY RETURNS'       | HAPPY RETURNS DAYLILY      | #1 CONT. | CLUMP          |
| 18   | J-B | JUNIPERUS S. 'BROADMOOR'           | BROADMOOR JUNIPER          | 15"      | B&B            |
| 14   | J-G | JUNIPERUS CH. 'OLD GOLD'           | OLD GOLD JUNIPER           | 18"      | B&B            |
| 2    | M-R | MAGNOLIA S. 'ROYAL STAR'           | ROYAL STAR MAGNOLIA        | 6' HT    | B&B            |
| 1    | M-S | MALUS 'SPRING SNOW'                | SPRING SNOW CRABAPPLE      | 2" CAL.  | B&B, FRUITLESS |
| 30   | P-N | PENNISETUM A. 'HADELN'             | DWARF FOUNTAIN GRASS       | #1 CONT. | CLUMP          |
| 18   | R-K | ROSA KNOCKOUT                      | KNOCKOUT ROSE              | 15"      | CONT.          |
| 12   | S-N | SPIRAEA 'NEON FLASH'               | NEON FLASH SPIRAEA         | 18"      | CONT.          |
| 2    | T-R | TILIA A. 'REDMOND'                 | REDMOND LINDEN             | 3" CAL.  | B&B            |
| 12   | V-S | VIBURNUM P.T. 'SHASTA'             | SHASTA DOUBLEFILE VIBURNUM | 30"      | B&B            |

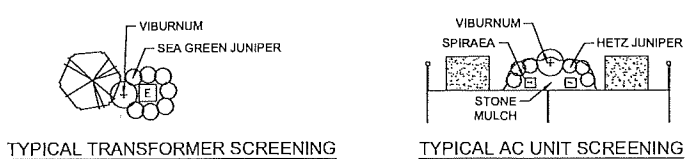
**9 MAIN ENTRY LANDSCAPE PLAN**  
L-3 1"=20'



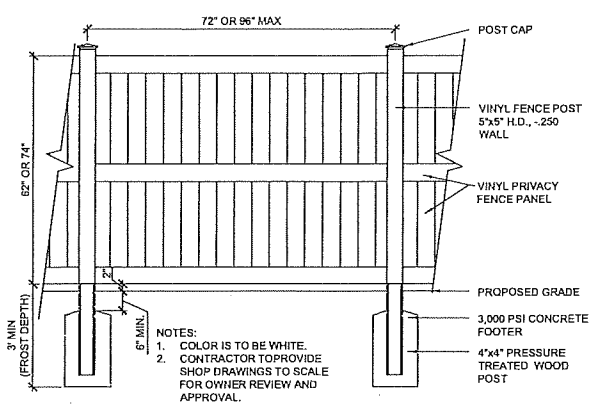
**SECONDARY ENTRY PLANT MATERIAL LIST**

| QTY. | KEY | BOTANICAL NAME                     | COMMON NAME              | SIZE     | NOTES |
|------|-----|------------------------------------|--------------------------|----------|-------|
| 3    | C-K | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER REED GRASS | #1 CONT. | CLUMP |
| 19   | H-H | HEMEROCALLIS 'HAPPY RETURNS'       | HAPPY RETURNS DAYLILY    | #1 CONT. | CLUMP |
| 10   | J-B | JUNIPERUS S. 'BROADMOOR'           | BROADMOOR JUNIPER        | 15"      | B&B   |

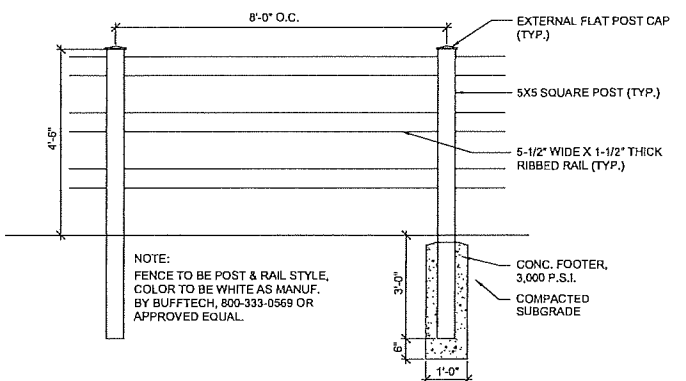
**8 SECONDARY ENTRY LANDSCAPE PLAN**  
L-3 1"=20'



**7 UTILITY SCREENING**  
L-3 NOT TO SCALE



**6 PVC PRIVACY FENCE**  
L-3 1/2"=1'-0"



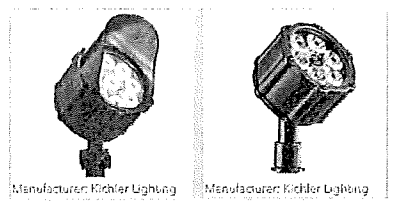
**5 3-RAIL PVC FENCE**  
L-3 1/2"=1'-0"

**LIGHTING LEGEND (SEE SHEET L-1 & L-2 FOR LOCATIONS)**

- TREE UPLIGHT - ONE (1) EACH TREE - KICHLER #15753 BKT - (60" Flood) - 12.4w - LED - #15701 BKTP SHORT SHROUD
- ▶ SALES SIGN - ONE (1) EACH FACE (4'W X 8'H) - KICHLER #15742 BKT - (35" Flood) - 8.5w - LED - #15701 BKTP SHORT SHROUD
- ▶ SALES SIGN - ONE (1) EACH FACE (2'W X 4'H) - KICHLER #15741 BKT - (10" Spot) - 8.5w - LED - #15701 BKTP SHORT SHROUD

**LIGHTING NOTES:**

1. LOCATE UPLIGHTS AS SHOWN ON THE PLAN. STAKE FINAL LOCATIONS OF LIGHTS FOR APPROVAL BY THE OWNER OR OWNER'S REPRESENTATIVE.
2. LIGHT SYSTEM BY KICHLER OR OWNER-APPROVED EQUAL.
3. LIGHTING SHALL BE INSTALLED WITH A REMOTE SWITCH CONTROL SYSTEM.
4. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND PER CURRENT ELECTRICAL CODE REQUIREMENTS.
5. CHOOSE TEMPORARY SIGN UPLIGHTING, ACCORDING TO SIGN TYPE USED. (EITHER 2'w X 4'h, OR 4'w X 8'h)

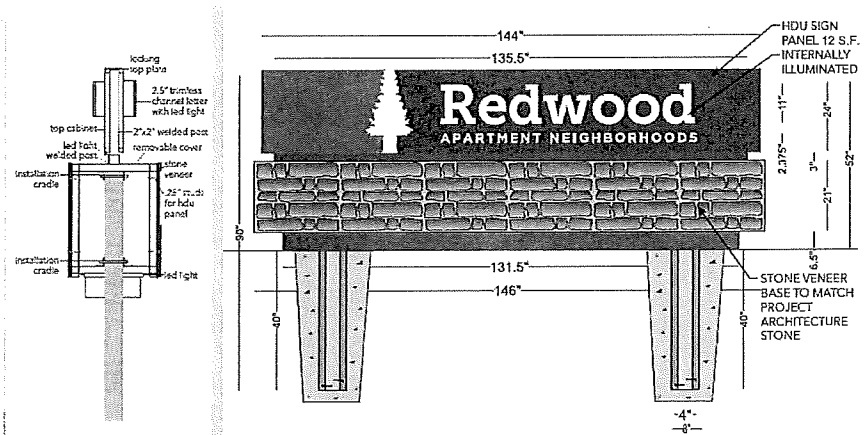


**4 LANDSCAPE LIGHTING**  
L-3 NOT TO SCALE



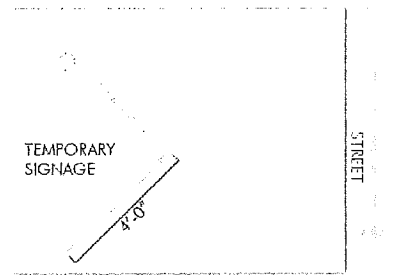
NOTES  
SIGN SHALL BE A DOUBLE SIDED BLADE SIGN PANEL MOUNTED TO 3 RAIL VINYL FENCING POSTS. LOCATED PERPENDICULAR TO THE RIGHT OF WAY.

**3 SECONDARY ENTRY SIGN**  
L-3 NOT TO SCALE



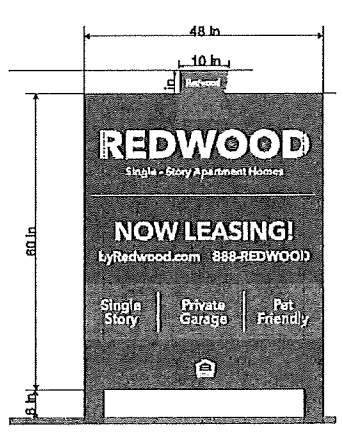
NOTES  
1. SIGN SHALL BE DOUBLE SIDED, INTERNALLY ILLUMINATED AND LOCATED PERPENDICULAR TO THE RIGHT OF WAY.  
2. ALL SIGNS MUST MEET THE REQUIREMENTS OF THE CITY AND BE APPROVED UNDER SEPARATE PERMITS ISSUED BY THE BUILDING DEPARTMENT.

**2 MAIN ENTRY SIGN**  
L-3 NOT TO SCALE



- 9.5" x 4.5" MDO painted PMS 925C on both sides with white premium vinyl lettering applied to face
- 2" x 1.4" x .96" posts painted 925C
- 3/4" x 10" x 10" MDO routed logo attached to face of sign to be painted PMS 7627C both sides with white premium vinyl letters on face

**SIGN ELEVATION VIEW**



**SIGN PLAN VIEW**

**1 TEMPORARY SALES SIGN**  
L-3 NOT TO SCALE



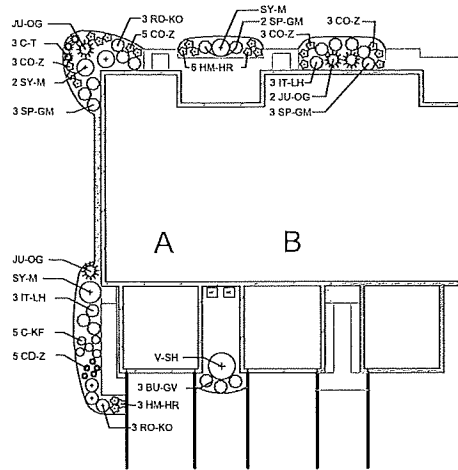
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consultants  
engineers  
architects  
planners

| DATE     | REVISION       |
|----------|----------------|
| 07/11/19 | TWP COMMENTS   |
| 07/29/19 | REV. SITE PLAN |
| 08/27/19 | PC SUBMITTAL   |

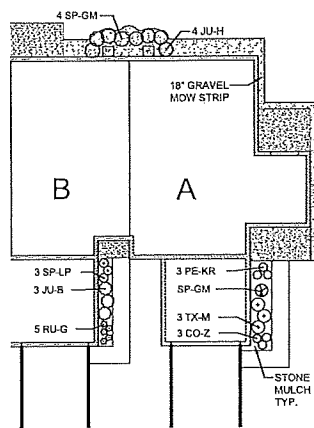
**ROCHESTER HILLS**  
EAST AVON RD, ROCHESTER HILLS, OAKLAND COUNTY, MI  
REDWOOD - 7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OH 44131

**ENTRY LANDSCAPE AND SIGN DETAILS**

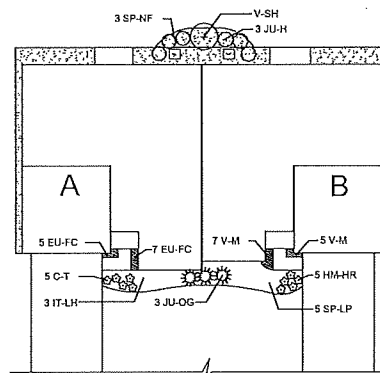
|             |           |
|-------------|-----------|
| PROJECT NO. | 190346    |
| DISCIPLINE  | LANDSCAPE |
| SHEET NAME  | L-3       |
| SHEET       | 3         |
| OF          | 6         |



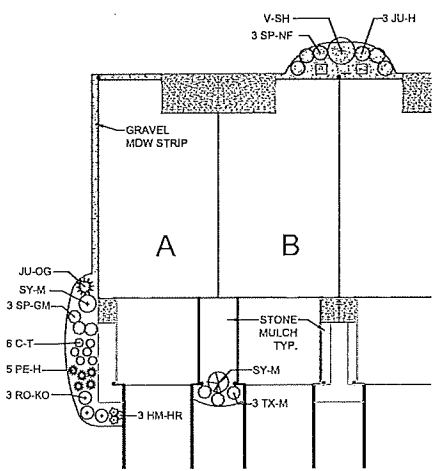
TYP. HAYDENWOOD LANDSCAPE PLAN



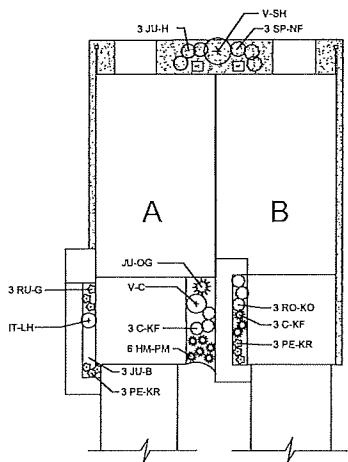
TYP. CAPEWOOD LANDSCAPE PLAN



TYP. WILLOWOOD LANDSCAPE PLAN



TYP. BREEZEWOOD LANDSCAPE PLAN



TYP. MEADOWOOD/FORESTWOOD LANDSCAPE PLAN

1 TYPICAL UNIT LANDSCAPE PLANS  
L-4 NOT TO SCALE

MEADOWOOD / FORESTWOOD UNIT A PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME                     | COMMON NAME                      | SIZE     | NOTES           |
|------|-------|------------------------------------|----------------------------------|----------|-----------------|
| 3    | C-KF  | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER FEATHER REED GRASS | #1 CONT. | CLUMP, 18" O.C. |
| 6    | HM-PM | HEMEROCALLIS 'PARDON ME'           | PARDON ME DAYLILY                | #1 CONT. | CLUMP, 18" O.C. |
| 1    | IT-LH | ITEA V. 'LITTLE HENRY'             | LITTLE HENRY SWEETSPIRE          | 18" HT.  | #3 CONT.        |
| 3    | JU-H  | JUNIPERUS SQ. 'HOLGER'             | HOLGER JUNIPER                   | 15" HT.  | B&B             |
| 3    | JU-B  | JUNIPERUS S. 'BROADMOOR'           | BROADMOOR JUNIPER                | 15" HT.  | #3 CONT.        |
| 1    | JU-OG | JUNIPERUS CH. 'OLD GOLD'           | OLD GOLD JUNIPER                 | 15" HT.  | #3 CONT.        |
| 3    | PE-KR | PENNISETUM O. 'KARLEY ROSE'        | KARLEY ROSE FOUNTAIN GRASS       | #1 CONT. | 2" O.C.         |
| 3    | RU-G  | RUDBECKIA HIRTA                    | BLACK-EYED SUSAN                 | #1 CONT. | 18" O.C.        |
| 1    | V-C   | VIBURNUM O. 'COMPACTUM'            | COMPACT EUROPEAN CRANBERRY       | 18"      | #5 CONT.        |

MEADOWOOD / FORESTWOOD UNIT B PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME                     | COMMON NAME                      | SIZE     | NOTES           |
|------|-------|------------------------------------|----------------------------------|----------|-----------------|
| 3    | C-KF  | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER FEATHER REED GRASS | #1 CONT. | CLUMP, 18" O.C. |
| 3    | PE-KR | PENNISETUM O. 'KARLEY ROSE'        | KARLEY ROSE FOUNTAIN GRASS       | #1 CONT. | 2" O.C.         |
| 3    | RO-KO | ROSA 'KNOCK-OUT'                   | KNOCK OUT ROSE                   | 18" HT.  | #3 CONT.        |
| 3    | SP-NF | SPIRAEA X 'NEON FLASH'             | NEON FLASH SPIRAEA               | 18"      | #3 CONT.        |
| 1    | V-SH  | VIBURNUM P.T. 'SHASTA'             | SHASTA DOUBLEFILE VIBURNUM       | 24"      | #3 CONT.        |

WILLOWOOD UNIT A PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME                | COMMON NAME                | SIZE     | NOTES           |
|------|-------|-------------------------------|----------------------------|----------|-----------------|
| 5    | C-T   | CERASTIUM TOMENTOSUM          | SNOW IN SUMMER             | #2 CONT. | CLUMP, 18" O.C. |
| 12   | EU-FC | EUONYMUS FORTUNEI 'COLORATUS' | PURPLELEAF WINTERCREEPER   | #1 CONT. | CLUMP, 18" O.C. |
| 3    | IT-LH | ITEA V. 'LITTLE HENRY'        | LITTLE HENRY SWEETSPIRE    | 18" HT.  | #3 CONT.        |
| 1    | JU-OG | JUNIPERUS CH. 'OLD GOLD'      | OLD GOLD JUNIPER           | 15" HT.  | #3 CONT.        |
| 3    | SP-NF | SPIRAEA X 'NEON FLASH'        | NEON FLASH SPIRAEA         | 18" HT.  | #3 CONT.        |
| 1    | V-SH  | VIBURNUM P.T. 'SHASTA'        | SHASTA DOUBLEFILE VIBURNUM | 24"      | #3 CONT.        |

WILLOWOOD UNIT B PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME               | COMMON NAME                | SIZE     | NOTES           |
|------|-------|------------------------------|----------------------------|----------|-----------------|
| 5    | HM-HR | HEMEROCALLIS 'HAPPY RETURNS' | HAPPY RETURNS DAYLILY      | #1 CONT. | CLUMP, 18" O.C. |
| 3    | JU-H  | JUNIPERUS SQ. 'HDLGER'       | HOLGER JUNIPER             | 15" HT.  | B&B             |
| 2    | JU-OG | JUNIPERUS CH. 'OLD GOLD'     | OLD GOLD JUNIPER           | 15" HT.  | #3 CONT.        |
| 5    | SP-LP | SPIRAEA J 'LITTLE PRINCESS'  | LITTLE PRINCESS SPIRAEA    | 12" HT.  | #3 CONT.        |
| 12   | V-M   | VIBURNUM P.T. 'MARIESII'     | MARIES DOUBLEFILE VIBURNUM | 30"      | B&B             |

CAPEWOOD UNIT A PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME              | COMMON NAME                | SIZE     | NOTES           |
|------|-------|-----------------------------|----------------------------|----------|-----------------|
| 3    | CO-Z  | COREOPSIS 'ZAGREB'          | ZAGREB COREOPSIS           | #2 CONT. | CLUMP, 18" O.C. |
| 3    | PE-KR | PENNISETUM O. 'KARLEY ROSE' | KARLEY ROSE FOUNTAIN GRASS | #1 CONT. | 2" O.C.         |
| 1    | SP-GM | SPIRAEA X 'GOLD MOUND'      | GOLD MOUND SPIRAEA         | 18" HT.  | #3 CONT.        |
| 3    | TX-M  | TAXUS M. 'DENSIFORMUS'      | DENSE YEW                  | 24"      | #3 CONT.        |
| 4    | JU-H  | JUNIPERUS SQ. 'HOLGER'      | HOLGER JUNIPER             | 15" HT.  | B&B             |

HAYDENWOOD UNIT A PLANT MATERIAL LIST

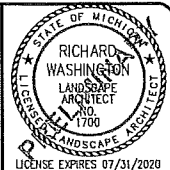
| QTY. | KEY   | BOTANICAL NAME                     | COMMON NAME                      | SIZE     | NOTES           |
|------|-------|------------------------------------|----------------------------------|----------|-----------------|
| 5    | C-KF  | CALAMAGROSTIS X A. 'KARL FOERSTER' | KARL FOERSTER FEATHER REED GRASS | #1 CONT. | CLUMP, 18" O.C. |
| 3    | C-T   | CERASTIUM TOMENTOSUM               | SNOW IN SUMMER                   | #2 CONT. | CLUMP, 18" O.C. |
| 13   | CO-Z  | COREOPSIS 'ZAGREB'                 | ZAGREB COREOPSIS                 | #2 CONT. | CLUMP, 18" O.C. |
| 3    | HM-HR | HEMEROCALLIS 'HAPPY RETURNS'       | HAPPY RETURNS DAYLILY            | #1 CONT. | CLUMP, 18" O.C. |
| 3    | IT-LH | ITEA V. 'LITTLE HENRY'             | LITTLE HENRY SWEETSPIRE          | 18" HT.  | #3 CONT.        |
| 2    | JU-OG | JUNIPERUS CH. 'OLD GOLD'           | OLD GOLD JUNIPER                 | 15" HT.  | #3 CONT.        |
| 6    | RO-KO | ROSA 'KNOCK-OUT'                   | KNOCK OUT ROSE                   | 18" HT.  | #3 CONT.        |
| 4    | SP-GM | SPIRAEA X 'GOLD MOUND'             | GOLD MOUND SPIRAEA               | 18" HT.  | #3 CONT.        |
| 3    | SY-M  | SYRINGA 'MEYER'                    | PALABIN LILAC                    | 18" HT.  | #5 CONT.        |

HAYDENWOOD UNIT B PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME               | COMMON NAME                | SIZE     | NOTES           |
|------|-------|------------------------------|----------------------------|----------|-----------------|
| 3    | BU-GV | BUXUS 'WINTERGREEN'          | WINTERGREEN BOXWOOD        | 18" HT.  | #3 CONT.        |
| 3    | CO-Z  | COREOPSIS 'ZAGREB'           | ZAGREB COREOPSIS           | #2 CONT. | CLUMP, 18" O.C. |
| 3    | HM-HR | HEMEROCALLIS 'HAPPY RETURNS' | HAPPY RETURNS DAYLILY      | #1 CONT. | CLUMP, 18" O.C. |
| 3    | IT-LH | ITEA V. 'LITTLE HENRY'       | LITTLE HENRY SWEETSPIRE    | 18" HT.  | #3 CONT.        |
| 2    | JU-OG | JUNIPERUS CH. 'OLD GOLD'     | OLD GOLD JUNIPER           | 15" HT.  | #3 CONT.        |
| 4    | SP-GM | SPIRAEA X 'GOLD MOUND'       | GOLD MOUND SPIRAEA         | 18" HT.  | #3 CONT.        |
| 1    | SY-M  | SYRINGA 'MEYER'              | PALABIN LILAC              | 18" HT.  | #5 CONT.        |
| 1    | V-SH  | VIBURNUM P.T. 'SHASTA'       | SHASTA DOUBLEFILE VIBURNUM | 24"      | #3 CONT.        |

CAPEWOOD UNIT B PLANT MATERIAL LIST

| QTY. | KEY   | BOTANICAL NAME              | COMMON NAME             | SIZE     | NOTES    |
|------|-------|-----------------------------|-------------------------|----------|----------|
| 3    | JU-B  | JUNIPERUS S. 'BROADMOOR'    | BROADMOOR JUNIPER       | 15" HT.  | #3 CONT. |
| 5    | RU-G  | RUDBECKIA HIRTA             | BLACK-EYED SUSAN        | #1 CONT. | 18" O.C. |
| 4    | SP-GM | SPIRAEA X 'GOLD MOUND'      | GOLD MOUND SPIRAEA      | 18" HT.  | #3 CONT. |
| 3    | SP-LP | SPIRAEA J 'LITTLE PRINCESS' | LITTLE PRINCESS SPIRAEA | 12" HT.  | #3 CONT. |



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planners  
consultants

| DATE     | REVISION | NO | PRELIM SET | ISSUED FOR: | SCALE | DESIGNED BY: | DRAWN BY: | CHECKED BY: |
|----------|----------|----|------------|-------------|-------|--------------|-----------|-------------|
| 07/15/19 |          | 1  |            | AS NOTED    | RW    | RW           |           |             |
| 07/01/19 |          | 2  |            |             |       |              |           |             |
| 06/27/19 |          | 3  |            |             |       |              |           |             |

ROCHESTER HILLS  
EAST AVON RD, ROCHESTER HILLS, OAKLAND COUNTY, MI  
REDWOOD - 7510 EAST PLEASANT VALLEY ROAD  
INDIANAPOLIS, OH 44131

UNIT LANDSCAPE PLANS

|             |           |
|-------------|-----------|
| PROJECT NO. | 190346    |
| DISCIPLINE  | LANDSCAPE |
| SHEET NAME  | L-4       |
| SHEET       | 4         |
| OF          | 6         |



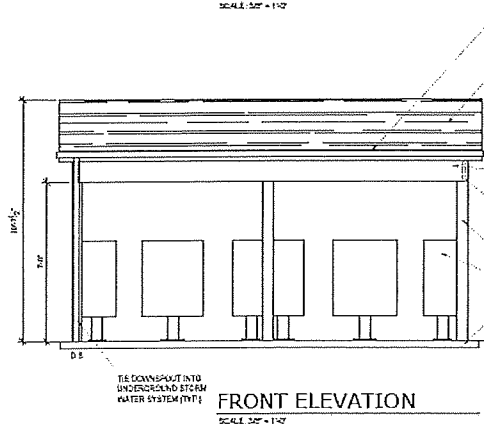
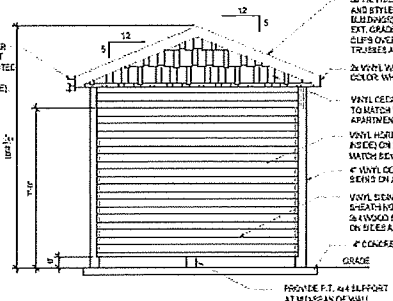
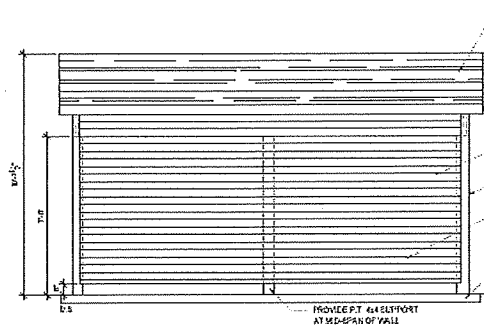
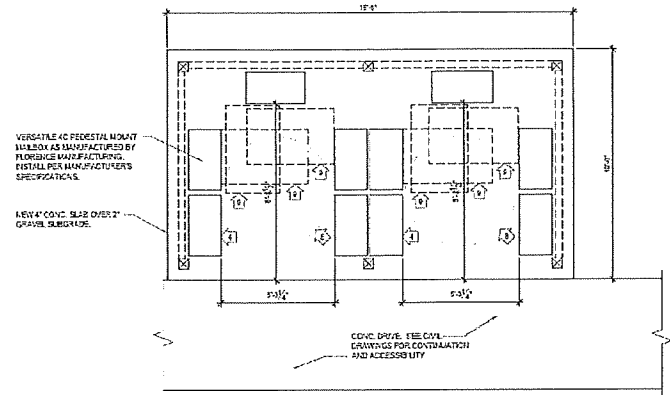
### BARK PARK NOTES:

#### Park Surface

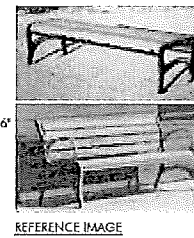
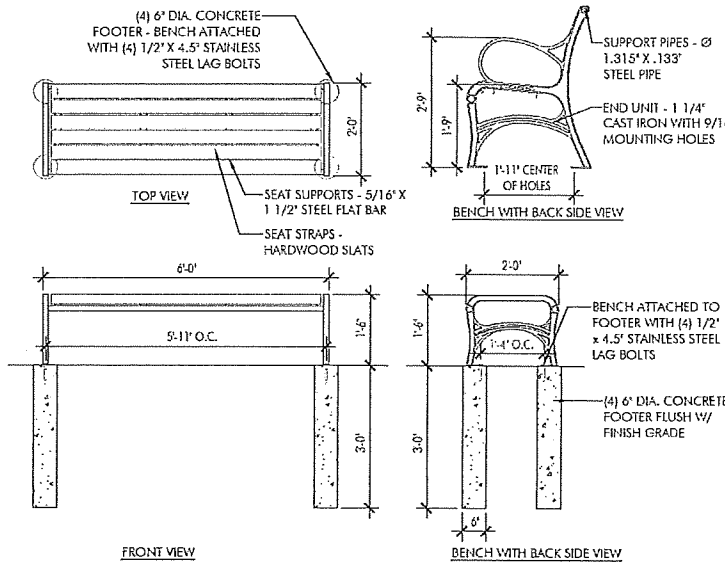
- The surface will be either natural lawn or pea gravel (installed to a depth of 6") throughout the fenced in dog park area. Consult with Redwood on desired surface.

#### Fencing

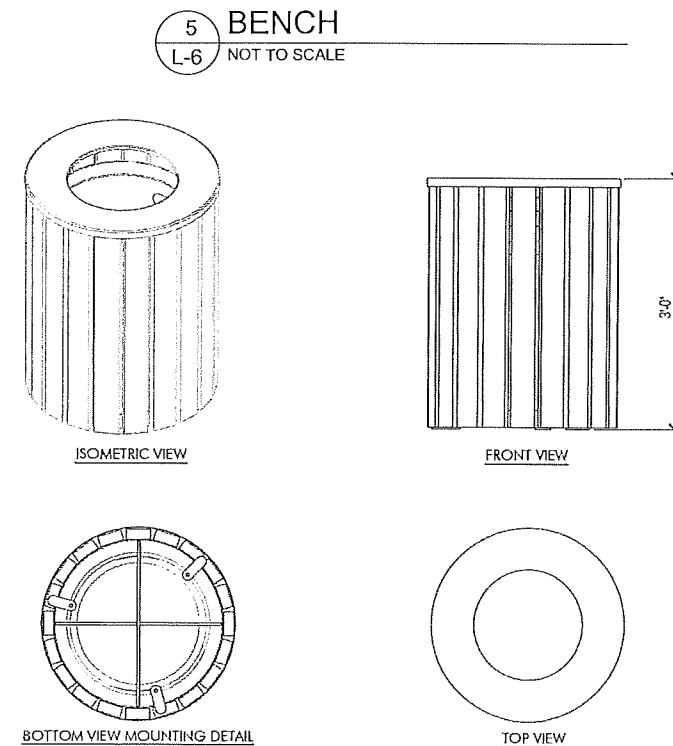
- Installed around the perimeter of the dog park.
- Standard construction (see detail 1, this page).
- Each dog park will have two (2) access points. These gates will be the same height as the surrounding fence. The access point for the dog park will consist of a double gate. The first, or outer gate, will provide the user access to a sixteen (16) square foot leashing/unleashing vestibule. This area will serve as a buffer between the dog park and the entrance. A second access point will provide access for maintenance of the dog park, but will not be accessible by users. All gates will be lockable.
- All gates will be the same height as the surrounding fence and will be a minimum of 42" wide.



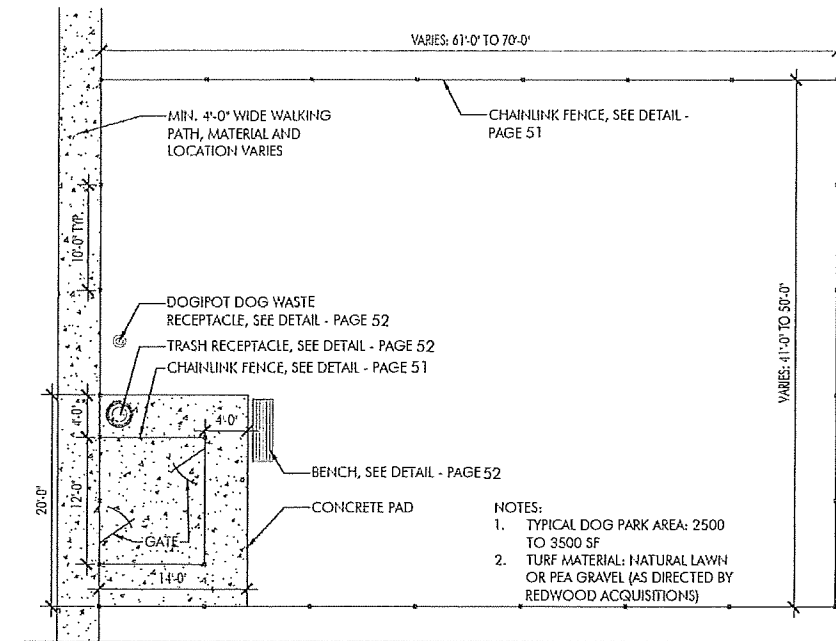
NOTE: REFER TO SITE PLAN FOR MAIL KIOSK SIZE AND LOCATION.



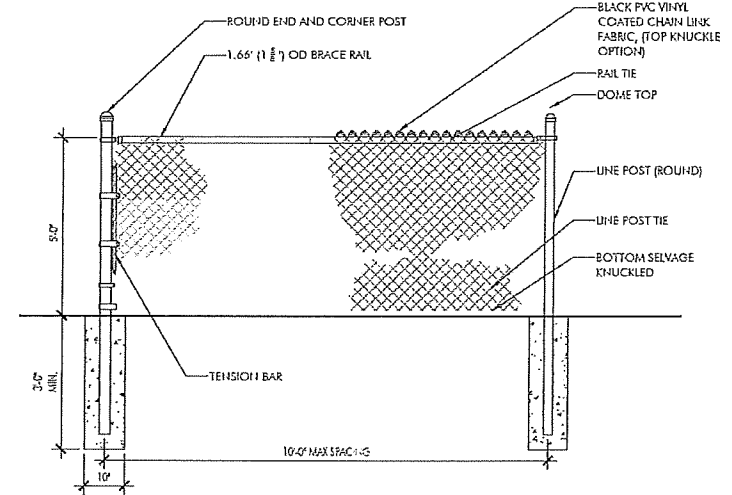
**SITESCAPES**  
AVONDALE BENCH  
PRODUCT AV1-1110  
AND AV1-1010  
AVAILABLE FROM:  
SITESCAPES  
www.sitescapesonline.com  
402-421-9464  
NOTES:  
1. 6" BACKED OR BACKLESS BENCH  
2. CAST IRON END UNITS  
3. HARDWOOD SLATS  
4. NO CENTER ARMREST  
5. POWDER COATED  
6. COLOR - SLATE



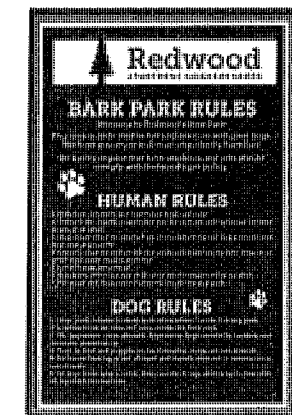
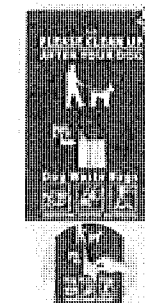
**SITESCAPES**  
AVONDALE RECEPTACLE  
PRODUCT AV2-3000  
AVAILABLE FROM:  
SITESCAPES  
www.sitescapesonline.com  
402-421-9464



3 DOG PARK LAYOUT  
L-6 NOT TO SCALE



2 DOG PARK FENCING  
L-6 NOT TO SCALE



Notes: Pet Station Dispenser and Pet Station Can to be ordered from [zerowasteusa.com](http://zerowasteusa.com) and mounted on a 4x4 post with white vinyl sleeve and cap

**1 PET STATION AND SIGN DETAILS**  
L-6 NOT TO SCALE



| DATE     | REVISION       |
|----------|----------------|
| 07/11/18 | TRP COMMENTS   |
| 07/20/19 | REV. SITE PLAN |
| 08/27/19 | PC SUBMITTAL   |

**ROCHESTER HILLS**  
EAST AVON RD., ROCHESTER HILLS, OAKLAND COUNTY, MI  
REDWOOD - 7510 EAST PLEASANT VALLEY ROAD  
INDEPENDENCE, OH 44131

**SITE FURNISHINGS DETAILS**

|             |           |
|-------------|-----------|
| PROJECT NO. | 190346    |
| DISCIPLINE  | LANDSCAPE |
| SHEET NAME  | L-6       |
| SHEET       | 6         |
| OF          | 6         |